

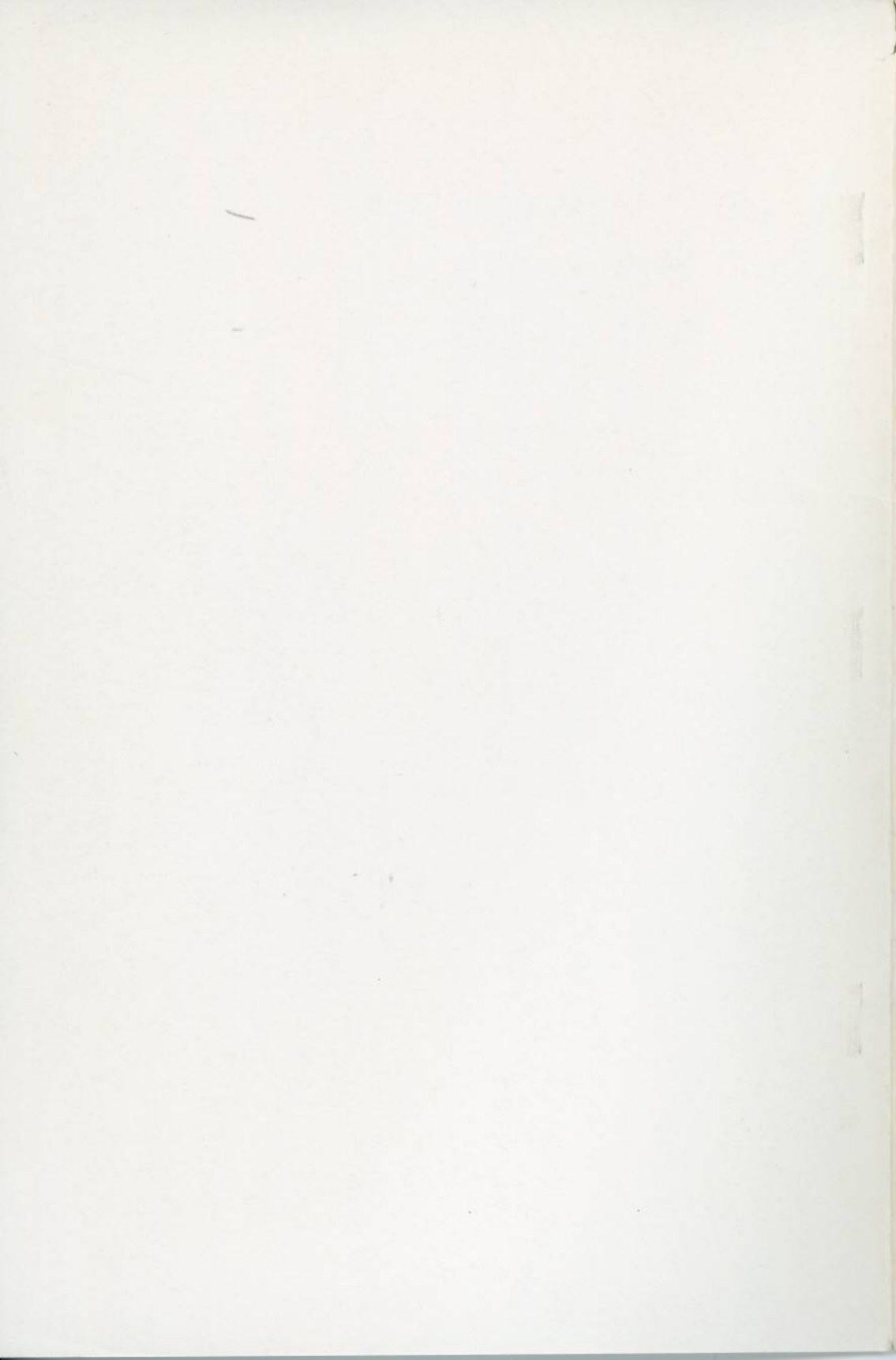
# **DELTA COLLEGE BULLETIN**

**1961 - 1963**

*March 1962 Issue*



**UNIVERSITY  
CENTER,  
MICHIGAN**



## TO THE PROSPECTIVE STUDENT:

Every student at Delta College belongs to three communities. The first is the specific school in which he is enrolled, and at Delta there are three: the College of Community Service, the School of Nursing, and the College of Letters.

Delta is planned on an assumption of future growth. Each one of the three schools will become larger, and new schools will be added. As growth occurs, however, each student should continue to find himself in an academic group small enough that he knows his fellow students, establishes friendship with his teachers, and is personally involved in the pursuit of common objectives. Whatever size Delta College may achieve in years to come, each student will be a member of an academic unit that preserves and guarantees to him small-college attention and experience.

The second community is the wider one of Delta College itself. The cultural life, the social activities, and the recreation and governmental affairs of Delta are organized on a college-wide basis. All of the great facilities of the institution including the library, the television programs, the art and music enterprises, the appearance of visiting specialists and authorities — all are part of the life of the student at Delta.

The third community is the wider one of a metropolitan area joined together to form a living organism of 350,000 individuals. The campus of Delta College is, in reality, the three counties of Saginaw, Midland, and Bay. Within this area will be found remarkable resources of specialized talent that will be brought together to serve the student. By the same token, the resources of the institution will be available to the industry, the various units of government, the community enterprises, the social service, and the cultural agencies of the tri-county area.

Located near the center of the triangle formed by the three major cities, Delta College is prepared to be a focus that not only concentrates the finest aspirations of this area, but also serves as a unifying influence among its people.

*Faithfully yours,*

*Samuel D. Marble*

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## EDUCATIONAL OBJECTIVES OF DELTA COLLEGE

*The Imparting of Knowledge.* The most obvious and long-established function of any institution of higher learning is communicating to its students in such a way as to give them permanent command of it, the knowledge which makes up our common cultural heritage and the specialized sectors of knowledge that may apply to their individual interests and professional objectives.

*The Discovery of New Knowledge.* A faculty member can continue to be a fresh and stimulating teacher only if he is also probing the frontiers of knowledge. In more comprehensive terms, any institution of higher learning must be in the forefront of the opening up of new vistas; the pursuit of knowledge for its own sake is the life-blood of the intellectual life.

*The Application of Knowledge.* In order to discharge its whole responsibility to society, the modern college or university must also translate new knowledge into terms that have meaning for the world of action, and bring this new material to bear on the practical affairs of men. It is a false conception to think of the college or university as an ivory tower withdrawn from the affairs of men, or as a stratospheric world of pure intellect unconcerned with the work-a-day world.

*The Integration of Knowledge.* The more the scope and complexity of knowledge increases, the more it becomes evident that there are no water-tight compartments in what we know, in what causes bring about what results, or in how we react to our environment. Therefore there is increasing attention to the relationships between fields of knowledge and to their interaction.

*The Development of the Student as a Total Human Being.* The primary obligation of an educational institution is to communicate to the student a firm command of some related fields of knowledge, and to develop in him the intellectual ability to utilize his knowledge effectively. However, any member of the complex society of today must have personal qualities and values that go beyond such a concept. In former days, the churches and the family gave the necessary personal development through their influence and discipline. With the increasing secularization of our society, and the relaxing of the close-knit character of the family as a unit, the educational institutions are being more and more called on to develop those elements of character and those values which are necessary in a civilized man to give him control and direction of his course in life.

*The Relating of the Student to His Environment.* Leaderships based on independence of thought and belief are vital to our future. There is an urgency to develop qualities that transcend "togetherness" and a common denominator, that express themselves in the drive for individual excellence and unique characteristics. Even a fully developed individual, however, must always act within the context of the group, and react to the forces of the group. It is a part of the educational responsibilities of our institutions to give attention to this balance of individuality and cooperation.



## **ORIGIN, HISTORY, AND GENERAL PURPOSE OF DELTA COLLEGE**

Delta opened after six years of planning and study. The College was proposed in 1955 when initial meetings were held with representatives of the three counties. Legislation was submitted to the State of Michigan in 1957, and in the same year Bay, Saginaw, and Midland Counties voted themselves into an administrative district for the purpose of financing, building, and operating a new institution of higher learning.

The three counties have a census in excess of 349,000 people and represent one of the rapidly growing sections of the State. It is generally believed to be the largest population concentration in the nation without a degree-granting institution. Legislation affecting the further development of the College is now under consideration.

When Delta College opened in September, 1961, Bay City Junior College closed after forty years of effective service to the area. Although Delta College is a new and independent institution, it will maintain without interruption the educational opportunities that previously have been available. The faculty of Bay City Junior College was absorbed by Delta and facsimile copies of Bay City Junior College records are maintained at the new institution.

Because the College is locally financed, special consideration is given to students whose legal residence is in the tri-county area. Tuition charged for these students is half that charged for others living outside the tri-county area.

## **LOCATION AND ENVIRONMENT**

The campus is located approximately in the center of the triangle formed by Bay City, Midland, and Saginaw, but somewhat nearer to Bay City than the other two cities. It consists of a tract of one square mile, 640 acres, and is bounded by Mackinaw, Cass, Four Mile, and Delta Roads. The buildings are situated in the center of this section.

All the activities of Delta College will, for the present, be housed in one building, constructed around a landscaped center court one acre in area. The main portions of the building, including the Library, the Commons, and two Student Concourses, look onto the Court through glass partitions. Other areas in the central building and in five wings accommodate faculty and administrative offices, classrooms, a gymnasium seating 2200, a small auditorium seating 266, a book store, and a technical area including educational television studios and master control rooms, language and audio-visual laboratories, a computer center, and other technological aids.

There are no dormitories or faculty housing on the campus. There are parking areas to accommodate 1400 cars.

**Library.** The Library of Delta College is the central study area and operates as an integral part of the educational program. Books, magazines, newspapers, and other types of library material are available for student and faculty use. Both materials and professional staff are available on a generous schedule of open hours.

Acquisition of materials, and planning for the operation of Delta College Library started two years before the first class session was expected to begin. The

standards of the Association of College and Research Libraries, a section of the American Library Association, were met from the start of operations. This fact means that the Delta College Library began at the point which some other institutions have as their library goal.

***Bookstore.*** Delta College has a well-equipped Bookstore in operation. The Bookstore is adjacent to the Commons, and provides a complete stock of textbooks and reference books, necessary school supplies, and a variety of other items which are related to the basic educational aims and activities of the College.

## **ACCREDITATION**

Delta College is a candidate for recognition by the North Central Association of Colleges and Secondary Schools. In the meantime, the College has developed suitable transfer arrangements with institutions in the State of Michigan such as the University of Michigan, Michigan State University, and Wayne State University. These institutions, and others, have given assurance of the acceptability of credits earned at Delta.

An inspection for preliminary accreditation will be made during the Spring of 1962 by the Michigan Commission on College Accreditation.

The legal basis of Delta College was established under Act 182 of the Public Acts of 1957.

## **THE TRIMESTER PLAN**

The Trimester Plan has been adopted by the Delta College Board of Trustees as a means of developing year-round operation. Each trimester is composed of fifteen weeks, and covers a full semester's work.

The two-year academic program offered by Delta College can be completed in one and one-third calendar years. Specifically, a freshman entering in September of one year can complete four trimesters by the end of December in the next calendar year; by entering in January can finish two academic years by April of the following year; and by entering in April can finish two academic years by August of the following year. However, students are not required to follow so concentrated a program, and course offerings are arranged to meet varying trimester attendance patterns.

An eight-week summer session, running concurrently with the summer trimester, is under development for the summer of 1962. Selected courses from the full range of Delta programs will be offered as justified by student enrollment.

## **WORK STUDY PLAN**

Cooperative education involves an arrangement with an employer which permits the student to work and attend college on one of two patterns: The first consists of alternating a semester of full-time work with a semester of full-time study. The second is an arrangement which permits the student to carry part-time work simultaneously with a part-time program of study. In either case, the employment is chosen for its educational value, and an effort is made to relate experience to study. A limited program with the Dow Corning Company, of Midland, is now in operation, and opportunities for additional programs will be explored.

## DELTA COLLEGE CALENDAR

1961-1962

August 30, 31, September 1, 1961	REGISTRATION
September 5	CLASSES CONVENE ( <i>Fall Trimester</i> )
November 23	THANKSGIVING VACATION
December 19	FALL TRIMESTER ENDS
December 20 through January 1, 1962	CHRISTMAS VACATION
January 2, 1962	CLASSES CONVENE ( <i>Winter Trimester</i> )
April 14	WINTER TRIMESTER ENDS
April 15 through April 22	SPRING VACATION
April 23	CLASSES CONVENE ( <i>Summer Trimester</i> )
May 30	MEMORIAL DAY ( <i>No Classes</i> )
July 4	INDEPENDENCE DAY ( <i>No Classes</i> )
August 7	SUMMER TRIMESTER ENDS
August 8 through September 3	SUMMER VACATION
September 4	CLASSES CONVENE ( <i>Fall Trimester</i> )

### *Eight Week Summer Session*

June 15, 1962	REGISTRATION
June 18	CLASSES CONVENE
July 4	INDEPENDENCE DAY ( <i>No Classes</i> )
August 11	SUMMER SESSION ENDS

1962-1963

August 29, 30, 31, 1962	REGISTRATION
September 4	CLASSES CONVENE ( <i>Fall Trimester</i> )
November 22	THANKSGIVING VACATION
December 18	FALL TRIMESTER ENDS
December 19 through January 1, 1963	CHRISTMAS VACATION
January 2, 1963	CLASSES CONVENE ( <i>Winter Trimester</i> )
April 13	WINTER TRIMESTER ENDS
April 14 through April 21	SPRING VACATION
April 22	CLASSES CONVENE ( <i>Summer Trimester</i> )
May 30	MEMORIAL DAY ( <i>No Classes</i> )
July 4	INDEPENDENCE DAY ( <i>No Classes</i> )
August 6	SUMMER TRIMESTER ENDS
August 7 through September 3	SUMMER VACATION
September 3	CLASSES CONVENE ( <i>Fall Trimester</i> )

### *Eight Week Summer Session*

June 14, 1963	REGISTRATION
June 17	CLASSES CONVENE
July 4	INDEPENDENCE DAY ( <i>No Classes</i> )
August 10	SUMMER SESSION ENDS



# ORGANIZATION

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## THE COLLEGE OF LETTERS

*Philosophy and Objectives.* Learning is something no one can do for the student; it is a personal activity which he must do for and by himself. The function of the educational institution is to create the situations that facilitate learning, furnish the guidance and experience through the faculty to keep learning in focus and moving toward an objective, and offer the stimulation and associations that lead toward a mature intellect and personality.

The rapidity of technological advance and the complexity of operation in the business and professional worlds are making the training of all students for specific and immediate objectives inadequate. On the other hand, there is a common body of knowledge and a common battery of skills which are required for every educated American, be he artist or engineer. This common body of experience is usually called "the liberal arts." As knowledge, it includes the history, thought, and arts of Western Civilization; as skills, it embraces, among others, the ability to deal with abstract ideas and problems, and the ability to deal with people, to communicate with them and cooperate with them. It is intensely practical in that it relates science and technology to the rest of human existence.

Professional schools of all types are insisting more and more on the desirability of the broad and flexible base offered by a liberal arts undergraduate program rather than narrow preparation for some specific operation. This demand will be met through broad courses taken in common by all students in the College of Letters.

The preparation in specific subject matters, which is prerequisite for later specialization or professional training, will be combined with the basic liberal arts approach through a series of elective courses which can be arranged in the most appropriate pattern to round out the student's needs and interests during the first two years of his college course.

*Methodology.* The College of Letters will combine the work usually identified as of the class-room and the curriculum with an interest in the general development of the student. This attention to the individual will be considered as an element of a total educational experience, not just lip-service to an ideal or "extra-curricular activities."

In so doing, emphasis will be given to motivating the student to do work of a self-directed nature, with special attention to helping him to develop the necessary study and organizational skills. On this base, every effort will be made to induce each student to work to his full capacity as an individual, with accelerated courses, personal projects, etc.

In the organization of instruction, every use will be made of those technological aids to teaching which free the professor from routine operations in order that more time and attention can be given directly to the student. Television, language and other types of audio-visual laboratories, programs of self-instruction through machines and other devices, and other technological means will be utilized, with the objective of personalizing the contacts of the individual student with the teacher thus freed from routine exercises.

*Types of Curricula.* The program of liberal arts-centered study, supplemented by the appropriate specialized subject matter courses, will prepare the

student for major concentrations and professional objectives in all principal fields.

*Major Concentrations:*

Literature	Economics
Languages	Political Science
History	Business Administration, etc.

*Professional Objectives:*

Law	Engineering
Medicine	Education, etc.

Transfer requirements to the various courses offered in the junior and senior years by other institutions of the State of Michigan have been worked out, and each entering student should consult with his adviser to decide upon the specific pattern of selection that is best adapted to his future objectives.

## **SCHOOL OF NURSING**

*Philosophy.* The School of Nursing contributes to the improvement of society and to the preparation of competent professional nurses. As an integral part of Delta College, the School of Nursing strives toward the College's objectives and ideals of excellence in teaching, advancement and discovery of knowledge, and positive contribution to the general welfare of society and its institutions. It recognizes that professional education is education for professional service, and thus accepts its particular functions of preparing nurses capable of making their distinctive contributions to the health services as one group of workers in the health profession.

The School of Nursing believes that the professional nurse is one who is able to give not only comprehensive nursing care, but must also develop the ability to function effectively with other members of the health team. The student must accept responsibility for contributing to the improvement of society and to further nursing research. He or she must develop the ability to be self-directing, to identify problems, and to work toward achieving satisfactory solutions.

The School of Nursing believes that the foundation courses in the humanities, the social sciences, and the natural sciences, are an integral part of the curriculum, that contribute to the student's depth and breadth of understanding.

The School of Nursing believes that there must be recognition of the individual student's level of development and needs in order that there may be the selection of learning experiences necessary for optimum personal and professional growth.

*Objectives.* The objectives of the School of Nursing are to assist the student to:

1. Develop the knowledge, skills, attitudes, and appreciation of values necessary for the nurse's role in the comprehensive care of the patient, the community's health, and the leadership skills as a member of the health team.

2. Understand the common phenomenon of one's physical environment to apply habits of scientific thought to personal, professional, and civic problems, to appreciate the implications of scientific discoveries for human welfare, and to apply scientific principles to the promotion of health.
3. Acquire and use the skills and habits involved in critical and constructive thinking.
4. Develop the tools of communication so they may be used effectively in interpersonal relations.
5. Participate actively as an informed and responsible member of the nursing profession involving professional problems.
6. Develop as a responsible and creative citizen of the community.

### **THE COLLEGE OF COMMUNITY SERVICE**

*Philosophy and Objectives.* The College of Community Service is a two-year college which has a multiple purpose. First, it will serve students who wish to take courses that lead to technical, trade, or semi-professional proficiency. Second, opportunities will be made available for high school graduates who need remedial study prior to enrolling in degree-type programs. Third, it will offer a limited number of specific transfer curricula for students preparing to complete specialized degree courses in other institutions. Its organization of curricula and its methodology are designed to meet personal and professional objectives alternative and complementary to those served by the College of Letters.

To make possible the implementation of these purposes, the instruction in the College of Community Service will be organized in three areas:

1. The area of improvement studies for students whose preparation, either in level of achievement or subject coverage, has not fully prepared them for college level work. Students who are enrolled in this area may transfer to either of the other two areas when they are sufficiently improved to proceed to more advanced study. All students assigned to a course in the Improvement Division are on probation.
2. The technical area for students who plan to complete their formal education in one or two years, and who are primarily interested in a vocational objective.
3. The academic area for students who are interested in professional and general educational objectives leading to a degree, and for whom the organization of curricula and the methods of program implementation of the College of Community Service are especially appropriate.

*Types of Curricula.* The following areas are suggestive of the type of curricula that will be available in this College:

Architectural Assistance	Secretarial Assistance
Accountancy	Traffic Management
Engineering Assistance	Medical Office Work
Office Management	Retail Management

## DIVISION OF CONTINUING EDUCATION

*Philosophy and Objectives.* The Division of Continuing Education of Delta College is designed to provide varied and continued educational opportunities of all types for adult residents of the Delta Service area. Credit and non-credit, formal and informal, continuing and adult education programs will be offered, both on campus and in cooperation with community schools and other interested organizations in the Delta area.

Interested adults may achieve a considerable variety and scope of objectives through attendance at Delta Evening College. A complete program of testing, counseling, and guidance functions will assist the evening student in the planning of study programs and the selection of courses.

Courses offered in the day programs will be available in the evening as called for, together with a variety of special classes not offered on the day schedule. The adult evening student may therefore complete the first two years of college credit work in most of the curricula offered to full-time students during the day. Through cooperative agreements with neighboring institutions, continued work at the third and fourth year college levels and in graduate school courses will also be available.

The Division of Continuing Education will also offer, or cooperate in offering in the College district, a large, versatile, and flexible program of adult education programs, activities, and courses without reference to credit programs. These offerings are intended for people who are interested in studying and participating for purposes of cultural advancement and the development of individual and group interests. A Regional Continuing and Adult Education Council assists in initiating, planning, and presenting cooperative adult education programs.

The fullest possible use of television — both closed and open circuit — is anticipated in both credit and non-credit programs as soon as the Delta television facilities become operational.

### *Basis for Placement in College and Curriculum*

While it is expected that the student in applying for admission will indicate the College and curriculum of his choice, it is the responsibility of the student personnel counselor to determine the proper enrollment for each individual. The counselor, in consultation with the student, will reach a decision on the basis of academic record, high school recommendations, achievement test scores, personal objectives, and all other available information.

Students in either the College of Community Service or the College of Letters may enroll in courses of the other College on the recommendation of the Counselor, and with the permission of the Dean of the College of Letters.

Students who are planning to transfer to another institution at the end of one or two years will normally be enrolled in the College of Letters, however, there are some sequences required for specific upper division majors which can be handled more effectively in the College of Community Service, and students intending to transfer to such majors will be enrolled in that College. In cases where one or two individual courses given only in the other College are required for a transfer curriculum, cross registration will be arranged.

*Note:* In many cases, individual courses or sets of courses in the Community Service, which are not primarily intended for transfer, may be acceptable to certain other colleges. This possibility should be investigated before final registration in cases where it is applicable.



## *Transfer between the College of Letters and the College of Community Service*

A student who transfers from one school or college to another at Delta will receive credit for all course work successfully completed. He will, however, be required to fulfill any special requirements of the college or school to which he transfers, in order to be eligible for the associate certificate.

### **ADMISSIONS**

#### *I. Requirements for Admission to the College of Community Service:*

Beginning September, 1962, the applicant will be required to present a diploma from an accredited high school with satisfactory achievement in the following:

*English:* Three years of College preparatory English are required at this time. Beginning September, 1963, four years of College preparatory English will be required.

*Mathematics and/or Science:* Two years required, but four years are urged.

*History and Political Science:* Two years are required.

*Foreign Language:* None required at this time, but at least two years are urged.

Applicants not planning to transfer will be admitted to curricula for which they qualify.

#### *II. Requirements for Admission to the College of Letters:*

The applicant must present a diploma from an accredited high school with satisfactory achievement in the following:

*English:* Three years of College preparatory English are required at this time. Beginning September, 1963, four years of College preparatory English will be required.

*Mathematics and/or Science:* Two years required, but four years urged.

*History and Social Science:* Two years required.

*Foreign Language:* None required at this time, but at least two years are urged.

#### *III. The Improvement Division:*

If the applicant does not bring a record which meets the requirements indicated in Paragraphs I and II above, he will be asked to make up deficiencies in the Improvement Division. This Division is open to students with legal residence in the Tri-County area who show adequate promise of overcoming academic deficiencies in order to proceed to college level instruction. Admission to this program is at the option of the College.

A student who is required to take one or more improvement level courses will be registered as an improvement student until he makes up all deficiencies and has met requirements for admission to either the College of Community Service or the College of Letters. The normal course load in the Improvement Division is twelve hours.

All students assigned to a course in the Improvement Division are on probation, and may be terminated at the option of the institution.

*The Applicant Must Offer the Following Placement Examinations:*

1. The Scholastic Aptitude Test (SAT) is required of all entering students. It is given by the College Entrance Examination Board, Educational Testing Service, 20 Nassau Street, Princeton, New Jersey. For detailed information, the student should see his high school counselor or write directly to the Educational Testing Service. Students who wish to take the SAT for guidance purposes at the end of their junior year of high school are encouraged to do so. The College asks that the applicant take this examination no later than March. Recommended testing dates for the Scholastic Aptitude Test are as follows:

<i>Test Dates</i>	<i>Registration Closes at Princeton, N. J.</i>
Saturday, December 2, 1961	November 18, 1961
Saturday, January 13, 1962	December 30, 1961
Saturday, March 3, 1962	February 17, 1962

2. Achievement tests in English, reading, and mathematics, administered by Delta College, are required of all entering freshmen. They will be given in the afternoons at 1:30 p. m., on the same dates and at the same place as the SAT.

High school students who are preparing for Delta College are urged to take the Preliminary Scholastic Aptitude Test for counseling purposes during their sophomore or junior year.

*Note:* The code number for Delta College used by the Educational Testing Service is 1816.

*Admission Applications.* Application blanks may be obtained from area high schools or from the Director of Admissions. A sheet of detailed instructions is included with the admission forms, and should be followed carefully. The documents and materials required for application must include:

1. An application blank fully and carefully completed in ink or typewritten.
2. A \$10.00 application fee to be sent with the application. This fee is not refundable. (For specific information see Tuition Refund.)
3. A medical blank completed by a physician.
4. A high school transcript mailed directly from the high school at the applicant's request.

5. The Personal Qualification Sheet to be taken by the student to the high school principal or dean, completed by him, and sent directly to the College.
6. Correspondence regarding admissions should be addressed as follows:

Director of Admissions  
Delta College  
University Center  
Michigan

*Admission Procedures.* A student is admitted to Delta College, but is asked to indicate the College and curriculum of his choice. After acceptance, each applicant will be given an individual appointment to meet with a Delta College counselor to discuss the student's abilities and goals, and to make the final decision on the College and curriculum in which he will be enrolled. The secondary school record of the applicant will be evaluated as to subjects studied, the quality of his performance, and the requirements of the curriculum requested. The recommendations of the high school principal and of the counselor will be definite factors in placement, as will evidence of his strong and weak points from the tests taken. Personal information as revealed by the application and by the health record will also be taken into consideration in planning the student's program.

*Transfer Students.* Transfer students are admitted to Delta College on an individual basis. All procedures applicable to the admission of new students will be followed, and after admission all requirements of Delta College must be met.

*Advanced Placement.* Delta College will cooperate to the fullest extent in granting advanced placement to entering freshmen. Requests for advanced placement should be made to the Registrar, accompanied by supporting evidence from the secondary school.

## FINANCIAL INFORMATION

**Registration Fees.** At the time an application for admission to Delta College is received it must be accompanied by a \$10.00 deposit. The \$10.00 deposit will not be refunded unless a prospective student is refused admittance by Delta College. If the student is admitted, the \$10.00 deposit represents a portion of his tuition and fees. This will not be refunded if the student later decides not to attend Delta College.

### TUITION AND FEES

	<i>Delta District Students</i>	<i>All Other Students</i>
Full-Time Tuition (12 hrs. to 16 hrs.) -----	\$100.00	\$200.00
Student Services Fee -----	10.00	10.00
Matriculation Fee (This fee is only paid once.) -----	10.00	10.00
Part-Time Tuition, Overload Hours (Over 16 hrs. Trimester) Evening School		
Tuition — Per Credit Hour -----	10.00	20.00
Credit by Examination — Per Credit Hour ---	7.50	15.00
If Previously Audited at Delta -----	5.00	10.00
Late Registration -----	5.00	5.00
Make-up Exam, Trimester or Mid-Trimester --	4.00	4.00
Change of Course -----	N/C	N/C
Transcripts — 1st -----	N/C	N/C
All Others -----	1.00	1.00
Course Fees		
Science Laboratory -----	10.00	10.00
Applied Art -----	5.00	5.00

**Residence Qualifications.** In order to qualify as a resident of the Delta College District for tuition purposes, a student must be a bona-fide resident of either Bay, Midland, or Saginaw Counties.

**Tuition and Fees Refund Policy.** After classes have begun and the full tuition has been paid, the following schedule will be used to determine trimester refunds. If a student withdraws during the:

First or second week -----	75%
Third or fourth week -----	50%
Fifth or sixth week -----	25%
No refund will be made after the sixth week.	

Summer Session refunds will be made as follows: If withdrawal occurs during the:

First Week -----	75%
Second Week -----	50%
Third Week -----	25%
No refund will be made after the third week.	



*Financial Assistance.* There are three basic forms of financial assistance available to Delta College students — Scholarships, Educational Grants and Loan Funds. Several scholarships and educational grants are available. Further specific information on each of these three forms of financial aid may be secured from the office of the Dean of Students. A brief discussion of each of these forms of financial assistance follows:

*Loan Funds.* The Delta College Student Loan Fund has been set up and is being increased steadily by additional gifts.

There is a substantial amount of money available to provide student loans under the National Defense Student Loan Fund. This loan fund has several specific features which make this loan fund of exceptional value to students who qualify. The interest rate is low and payments do not begin until a student's college work is completed in most cases. In addition, there is a special feature providing for the forgiveness of a portion of the loan for those students who enter the teaching profession.

*Scholarships.* Delta College will grant scholarships, as the name implies, to students who have demonstrated superior academic achievement. The funds for these scholarships are made available through the generosity of interested individuals and firms. Some donors specify that the recipients must show financial need as well as evidence of superior academic achievement.

The following scholarships and loan funds have been established at Delta College. Applications should be made at the office of the Dean of Students.

*The Student Emergency Loan Fund.*

Started by the Arthur Hill Alumni Class of 1935 in the hope that additional contributions will be made to the fund. Sums no greater than \$25.00 are available, without interest, and repayable within one month.

*The Gilbert A. Curry Memorial Fund.*

Available for loans to deserving students.

*The Bay City High School Reunion of 1939 Scholarship Fund.*

Available for Bay County students.

*The Lucy Hammond Scholarship Fund.*

This fund provides two scholarships for students who wish to enter medical technology.

*The Seth Babcock Scholarship Fund.*

The interest to be available for scholarship grants.

*The Don E. Karn Scholarship Fund.*

The interest to be available for scholarship purposes.

*The Mr. and Mrs. Herbert D. Doan Endowment Fund.*

The interest to be available for scholarship purposes.

*The Dow Chemical Company Scholarship Fund.*

A scholarship grant of \$25.00 per trimester for ten students.

*The Miss Mary Elizabeth Hetherington Scholarship.*

The sum of \$300.00 will be awarded to a graduate of Saginaw Senior High School definitely planning on four years of college, not a terminal course. To be considered, a candidate must take the "College Board" Examination and the Scholarship will be awarded on a basis of character, intellectual qualities, and academic merits.

*The Saginaw Valley Osteopathic Association Scholarship.*

This Association has established four one-year scholarships of which three are to be given to graduates from the Tri-County Area, and one at large.

*The Fred Dulmage, Sr. Fund.*

The earnings from these donations will be used for the award of a plaque or a prize to an outstanding student in Engineering.

*The Mr. and Mrs. James Gerity, Jr. Broadcasting Trust Agreement.*

The interest to be used for scholarship purposes at the discretion of the College.

*The Leonard Bergstein Loan Fund.*

An initial gift in the hope that additional contributions will be made in the future. The total sum to be used for student loan purposes.

*The Consumerettes of Bay City.*

A scholarship grant of \$50.00 to a student whose father or mother is a Bay City Division employee of Consumers Power.

*The Francis Goll Mills Education Grants.*

These grants are awarded to Saginaw Public High School graduates who are partially self supporting.

*The Leonard Bergstein Pre-Pharmacy Scholarship.*

The sum of \$100.00 in tuition per semester is awarded to the selected student who maintains adequate grades.

*The Family Loan Student Assistance Fund.*

This fund is established by the Family Loan Company of Saginaw. It is available to students in need, with the expectation of re-payment at the convenience of the student. Loans are granted without interest.

In addition to the above scholarships, funds are available on the basis of an annual grant from the donor. Inquiries should be made at the office of the Dean of Students.

*Educational Grants.*

Some funds have been made available for students who can show financial need but may have achieved only average high school records because of unavoidable circumstances.

## GENERAL INFORMATION AND REGULATIONS

*College Success.* Delta College believes that all students should show academic accomplishment if they are to remain in college. Students showing unsatisfactory progress will be placed on probation. If the record continues to be unsatisfactory, the student will be asked to withdraw from college. A student enrolled in one or more courses in the Improvement Division at the request of the College will also be considered to have probationary status.

While the faculty will assist the student in every way possible by individual help and counseling, the student must take the responsibility for his ultimate success. Absences from class and too heavy work programs inevitably lower academic accomplishment.

The College program is being planned to occupy fully the student's time. The student must face realistically his own abilities and limitations, and arrange his total schedule accordingly. If it is necessary for him to work more than ten or twelve hours weekly in addition to carrying a college program, he should reduce his academic load proportionately.

*Normal Class Load.* No student may elect more than 17 hours (not including physical education) without special permission from the Dean or Director of the College, School, or Division in which he is enrolled. Such permission will require the concurrence of the Counseling Office and the student's faculty adviser.

As a prerequisite for such permission, the student must have earned a grade point average of 2.5 or better during the previous college trimester or during the last period in high school, whichever was more recent.

### *Course Numbers and Notations*

1. Courses covering similar areas in the College of Community Service and in the College of Letters are numbered differently to indicate differences in treatment.

2. All courses numbered below 100 will be in the Improvement Division. They will be given service credit, but will not be counted for a certificate of graduation from the College of Community Service nor will they be considered for honor societies, extra curricular activities, etc.

All courses numbered in the 100 series will normally be taken by students below sophomore standing. All courses numbered in the 200 series will normally be taken by students with sophomore standing.

Registration in courses not normally open to the individual student will be arranged on the recommendation of the Counselor, and with the permission of the appropriate Dean.

3. A numerical notation at the end of each course description indicates the number of class and laboratory hours, i.e., 3-2 indicates 3 hours of lecture and discussion and 2 hours of laboratory or other applied exercise.

4. Certain courses in the College of Community Service numbered in the 100 series will be offered only if registration justifies. All course offerings will be re-examined in the light of the experience of the academic year 1961-62.

5. Certain courses in the College of Community Service numbered in the 200 series will be offered for the academic year 1961-62 only to complete the programs of transfer students from the Bay City Junior College.

## Grades and Grade Points

The following grading system will be used:

A — Excellent	D — Poor	W — Satisfactory
B — Good	E — Failed	W-D or W-E —
C — Fair	I — Incomplete	Withdrawn Unsatisfactory

If an Incomplete is not removed by the end of the fourth week of the trimester following that in which the I was given, the grade becomes an E.

The grade point system will be as follows:

*For each credit hour of—*

A — 4 points	D — 1 point
B — 3 points	E — No point
C — 2 points	

In the calculation of the overall grade point average, the number of E hours must be included, although no grade points are allowed. Grade points for physical education are not to be included in the overall average.

**Class Standing.** A student who has earned 24 semester hours credit will be ranked as a sophomore. All other students will be ranked as freshmen, except those enrolled in the Improvement Area of the College of Community Service, who will be ranked as non-classified.

**Class Attendance.** The policy on attendance at class and other College exercises will be as follows:

1. Attendance will be expected at all classes. There will be no system of cuts.
2. Courtesy demands that students explain the reasons for their absences to their instructors.
3. It is the responsibility of the student to make definite arrangements for all work before going on field trips or other college-sponsored events. If proper credentials for such activities are presented and arrangements are made for the work before the event, then the absence should not be reported, but should be recorded in the instructor's records as excusable.
4. Except in cases involving field trips or school activities which involve group absences, no instructor will require statements from students concerning absences.
5. A daily record of all absences will be maintained by all instructors.
6. Whenever the number of absences of a student become *detrimental to his progress* in a class, as determined by the instructor, the student will be referred to the counseling office by the instructor.
7. If either of the following two situations occurs, the student may be dropped from the class at the discretion of the instructor:
  - A. If further absences occur, or
  - B. If the student does not present to the instructor satisfactory evidence of contact with his adviser.



## *Academic Probation, Dismissal, and Readmission*

1. All fully enrolled students will be required to achieve the following grade-point average in each trimester of attendance to remain in good standing:

First trimester -----	1.5	Third trimester -----	2.0
Second trimester -----	1.75	Fourth trimester -----	2.0

Any student who fails to meet the minimum standard of achievement for good standing in any trimester will be placed on probation for the following trimester, and failure to meet the minimum standard for a second time in two successive trimesters will result in dismissal for academic deficiency. Students in the Improvement Division are admitted on probationary status.

Any student who fails to achieve a grade point average of 1.25 will normally be dismissed for academic deficiency.

2. A student who has been dismissed for academic deficiency may apply for readmission after the lapse of one trimester. If readmitted, he will be on probation subject to the conditions above.

3. The above regulations for academic probation and dismissal also apply to transfer students. Grade-point averages from colleges previously attended are given the same right as those earned at Delta College, and the same scale is applied for probation and dismissal.

*Change of Class Registration.* Students who wish to change their course elections in any way must secure permission and the proper forms from the Counseling Office. The request must then be approved and signed by the faculty adviser and instructors concerned before being returned to the Counseling Office.

1. The last date for entrance into a course will be the last day of the second week of the College trimester.

2. During the first two weeks of classes, no record of withdrawal appears on the student's record, provided he has processed the Change of Election form.

3. Courses dropped after the first two weeks are recorded with the mark of "W" if the grade is satisfactory, or "W-D" or "W-E" if unsatisfactory, with the additional notation "no credit" in all cases. The appropriate honor points are counted for purposes of probation, but not for over-all grade point average on the official record.

*Withdrawal from College.* To withdraw from college, the student must secure a withdrawal form from the Counseling Office and process it according to directions.

*Readmission After Withdrawal or Dismissal for Academic Deficiency.* All applications for readmission will be made through the Counseling Office, and will be considered only after an interview with a counselor.

Students who have been asked to withdraw because of academic deficiency will be considered for readmission only after the lapse of one calendar year from the time of their withdrawal, and must present evidence which will indicate the possibility of success at Delta College.

*Make-up Exercises and Examinations.* Requests for make-up exercises and examinations will be granted only by authorization from the office of the Dean of Students.

**Grade Requirements for Participation in Activities.** Students must have a point average of 2.0 or better, in the preceding trimester to accept offices or major chairmanships in student activities. Participation in inter-collegiate athletics requires the same academic average. A student enrolled in an improvement course is not eligible for intercollegiate athletics. Intramural athletics are open to all students.

**Recognition of Superior Academic Achievement.** Each trimester there will be issued a Dean's List, containing the names of all students who have a grade point average of 3.5 or better.

Graduates who are in the upper ten percent of the class will be honored at the Annual Honors Convocation.

**Transcripts and Recommendation for Transfer.** Students wishing transcripts for purposes of transfer must request them from the office of the Registrar. All official transcripts are sent directly to the institutions designated by the student. The first transcript is furnished without charge. For every transcript after the first a fee of one dollar, payable in advance, will be charged.

In addition to a transcript, any student who wishes a recommendation to the receiving institution must present his application to the Registrar, who, after attaching the transcript, will forward the application to the appropriate Delta office for action. Such a recommendation from Delta will be based on the total progress of the individual and not on academic achievement alone.

**Transfer to Upper Division at Delta.** Should legislation be passed by the State of Michigan authorizing upper division courses on the Delta Campus, the student desiring to continue into the junior year should present a transcript containing the four Foundation Courses offered by the College of Letters.

**Associate Certificate from College of Community Service.** Students who wish to receive an Associate Certificate from the College of Community Service must complete 62 hours of credit in courses numbered above 100 with a minimum grade point average of 2.0 including the following:

1. Eight hours in the field of English and Communications.
2. One of the following:
  - a. Eight hours of laboratory science or a four hour laboratory science course and Mathematics to total a minimum of eight hours.
  - b. Eight hours in the field of the Humanities.
  - c. Eight hours in the field of the Social Sciences.
3. To satisfy state law, three hours of Political Science are required which may be included within the eight hours in the field of Social Sciences.
4. Two hours in Physical Education.

**Associate Certificate from College of Letters.** A student who wishes to receive an associate certificate should present 60 hours including:

1. The foundation courses.
2. 28 additional hours in the College of Letters, or work accepted as equivalent to courses offered by the College of Letters.
3. When a student is originally registered in the College of Community Service and transfers his registration to the College of Letters, the following courses

will be accepted as equivalent to those offered in the College of Letters and credit may be applied toward the associate certificate —

*Biology:* 121, 131, 141, 211, 221.

*Chemistry:* 111, 112, 122, 205, 207, 211, 212, 221, 222, 223.

*Economics:* 203, 211, 212.

*English:* 111, 112, 221, 231, 241.

*Geography:* 111, 112, 121, 211.

*Geology:* 111, 112.

*History:* 211, 212, 217.

*Mathematics:* 122, 123, 163, 213, 221, 222.

*Philosophy:* 211, 221.

*Physics:* 211, 212, 215.

*Political Science:* 211, 213, 215, 217.

*Psychology:* 211, 216, 222, 231.

*Sociology:* 211, 212.

4. For students planning to transfer to another institution with specific requirements not covered by Paragraph 3 above, the required special courses may be applied toward the associate certificate in Letters and are subject to the approval of the Dean of Letters.

## STUDENT AFFAIRS

*Office of the Dean of Students.* Delta College believes that while the intellectual development of the student is of great importance, the social, spiritual, and physical aspects of the individual are an inseparable part of his development. The College provides a climate in which this total growth is encouraged and made possible. The office of the Dean of Students offers services which contribute to this development and which complement the student's academic program. Student affairs of all kinds are administered through the office of the Dean of Students, known as the Counseling Office.

*Counseling Office.* The office of the Dean of Students is concerned with student counseling and with testing.

- (1) Professionally trained counselors are available in the Counseling Office to give special assistance with personal, educational, and vocational problems.

- (2) Each student also is assigned to a faculty adviser who has special competence in the area of the student's interests.

In addition to entrance tests, the Counseling Office makes available interest and aptitude tests for individual students.

*Honor System.* While Delta College has not formalized an honor system to govern academic exercises, the College believes that without personal honor the opportunity for education is wasted. Delta students are expected to abide at all times by a code of personal honor.

*Student Health.* The College maintains a Health Center and is equipped to provide emergency treatment and check minor health problems. A registered nurse is on duty from 8:30 a.m. to 4:30 p.m.

Student health and accident insurance are available at a low rate.

*Student Residence.* Delta College does not at present maintain dormitories and cannot assume full responsibility for student housing. The office of the Dean of Students maintains, however, a list of rooms which are suitable for

students not living with their families, but ultimate responsibility for housing must rest with the parents. Experience indicates that students should live in private homes rather than in student apartments which have no adult supervision.

***Athletics.*** The College of Community Service requires two units of physical education of students who are not enrolled in improvement courses. The College of Letters has no physical education requirement.

A program of intramural activities offers opportunity for all students to participate in many types of sports and recreation. The College has programs of intercollegiate athletics in cross country, basketball, golf, tennis, track, and swimming; other types of competition will be added as the growth of the College makes possible.

***Student Government.*** Basic in the philosophy of Delta College is the belief that the student must share with the administration and faculty the responsibility for his own development. The College Council, composed of students and faculty, contributes to the total Delta program. The development of the College Council is a primary concern of the College.

***Publications.*** A college newspaper, a yearbook, and a creative writing book will be published by the student body. A Publications Board, a branch of the College Council, consisting of student and faculty representatives, determines general policies for college publications.

***Student Activities.*** Activities are coordinated by the Activities Board, a branch of the College Council. The program includes both social and cultural affairs.

***Student Interest Groups.*** Delta College encourages the formation of groups which have common interest or hobbies. Recognition of Delta College clubs may be gained by securing the proper forms from the Director of Student Activities and petitioning the Activities Board for recognition. Faculty advisers with special qualifications and interests will be designated on the request of the club.

Such groups are anticipated in the areas of drama, music, art, debating, political and international affairs, departmental or professional subjects, radio, television, motion picture, photography, skiing, hunting, hiking, canoeing, nature study, archeology, etc.

#### PLACEMENT SERVICES

***Part-time Employment.*** While the College cannot guarantee to secure part-time employment for students, every effort is made to find suitable work for those who apply for it. Employment also can be arranged through the Work-Study Plan when it is in operation.

Students carrying full college programs should not work more than twelve hours weekly. If it is necessary for any individual to work more than this, the student should lighten his academic program.

***Full-time Employment.*** Delta College is developing a placement service which will be of service to both students and employers.

***Activity Ticket.*** Upon registration each student receives an activity ticket and within two weeks an Identification Card. These cards will admit him without further payment to designated concerts, plays, athletics, and many other social and cultural events.



## COURSE OFFERINGS FOR THE COLLEGE OF LETTERS

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### HUMANITIES

- 111 *Foundations of Western Civilization I* 4 hrs. credit  
PREREQUISITE: None. Literature, music, plastic arts, philosophy, and currents of history from the Age of Sophocles through the Renaissance, with emphasis on their interrelation. Selected great works for each period. Practical experience in a creative medium for each student. 4-0
- 112 *Foundations of Western Civilization II* 4 hrs. credit  
PREREQUISITE: None. Continuation of Humanities 111. From the late 17th century to the late 19th century. Practical experience in a creative medium for each student. 4-0
- 211 *Foundations of Western Civilization III* 4 hrs. credit  
PREREQUISITE: None. The late 19th century to the present, with emphasis on American civilization. Practical experience in a creative medium for each student. 4-0.
- 212 *Foundations of Non-Western Civilizations* 4 hrs. credit  
PREREQUISITE: None. Indian, Japanese, Arab, and African culture. Practical experience in a creative medium for each student. 4-0

### SOCIAL STUDIES

- 111 *Foundations of Society I* 4 hrs. credit  
PREREQUISITE: None. The principles, interrelationship, and function in social dynamics of the forces usually labeled economics, sociology, anthropology, political science, etc., with particular attention to their effect in what is usually called history. The project method, related where possible to local conditions, will be a principal means of instruction, plus intensive study of selected primary source material.
- 112 *Foundations of Society II* 4 hrs. credit  
PREREQUISITE: Social Studies 111. Continuation of Social Studies 111. 4-0

### NATURAL SCIENCES

- 111 *Foundations of Science* 4 hrs. credit  
PREREQUISITE: None. The philosophy, development, rationale, and methodology of the scientific approach, demonstrated by selected illustrations showing the range and interrelationships of the various fields of science. Demonstrations and laboratory exercises will emphasize methodology and the necessary precision in verifying data rather than the acquisition of one or more specific areas of knowledge. Selected pieces of primary source material will also be given intensive study. 3-3
- 112 *Foundations of Science* 4 hrs. credit  
PREREQUISITE: Natural Sciences 111. Continuation of Natural Sciences 111. 3-3

## ASTRONOMY

- 151 *Descriptive Astronomy* 3 hrs. credit  
PREREQUISITE: Natural Sciences 111 must be taken concurrently, if not taken earlier. Solar system, stars, galaxies, celestial navigation, Kepler's laws. 3-2

## BIOLOGY

- 151 *General Botany* 4 hrs. credit  
PREREQUISITE: Demonstrated competence in high school biology and/or chemistry, or college biology; Natural Sciences 111 (or taken concurrently). Synoptic study of plants combined with principles of their ecology, anatomical functions, genetics, evolution, and economic importance. Field trips. 2-4
- 161 *General Zoology* 4 hrs. credit  
PREREQUISITE: Demonstrated competence in high school biology and/or chemistry, or college biology; Natural Sciences 111 (or taken concurrently). Synoptic study of animals combined with principles of their distributions, functions, genetics, and evolution. Field trips. 2-4
- 163 *Physiological Anatomy* 4 hrs. credit  
PREREQUISITE: High school biology, or college biology; Natural Sciences 111 (or taken concurrently). Gross and microscopic studies of human organ-systems and tissues, and their structural-functional interrelationships. For students majoring in nursing and health sciences. 2-4
- 164 *Physiological Anatomy II* 4 hrs. credit  
PREREQUISITE: Biology 163. Continuation of 163. 3-3
- 191 *Special Projects and Seminars I* 1-4 hrs. credit
- 192 *Special Projects and Seminars II* 1-4 hrs. credit
- 251 *Microbiology* 3 hrs. credit  
PREREQUISITE: Natural Science 111; Biology 151, or Biology 161, or Biology 163. Survey of bacteria, fungi, protozoa, parasites, and viruses. A study of their structure and function including cellular metabolism and physiology. Microbes in health and disease. Control of pathogens by sterilization, chemical agents, and other means. Defense mechanisms of the body. 2-2
- 261 *Chordate Anatomy* 4 hrs. credit  
PREREQUISITE: 161; Natural Sciences 111. Study of gross and microscopic (mostly) vertebrate anatomy, with emphasis on functional homologies showing evolutionary principles. 2-6
- 262 *Chordate Embryology* 4 hrs. credit  
PREREQUISITE: 261. Developmental anatomy of living and fixed tissues with applications to medicine, aging, and evolution. 2-6
- 291 *Special Projects and Seminars III* 1-4 hrs. credit
- 292 *Special Projects and Seminars IV* 1-4 hrs. credit

## CHEMISTRY

- 151 *General Chemistry* 4 hrs. credit  
PREREQUISITE: Demonstrated competence in high school Chemistry and algebra, or Chemistry 81; Natural Sciences 111 must be taken concurrently, if not taken earlier. Atomic theory, chemical bonding, periodic table, colligative properties, colloids, stoichiometry, kinetic theory. 4-3
- 152 *General Chemistry and Qualitative Analysis* 4 hrs. credit  
PREREQUISITE: Chemistry 151 with a C or better. Natural Sciences 112 must be taken concurrently, if not taken earlier. A continuation of Chemistry 151. Solutions, collision theory, equilibrium, redox reactions, electrochemistry, molecular structure and properties, development of a scheme for qualitative analysis. 4-3
- 191 *Special Projects and Seminars I* 1-4 hrs. credit
- 192 *Special Projects and Seminars II* 1-4 hrs. credit
- 251 *Organic Chemistry I* 4 hrs. credit  
PREREQUISITE: Chemistry 152 with C or better. Mechanism and principles of organic reactions, stereochemistry, nomenclature and properties of organic compounds, organic analysis and synthesis of organic compounds. 4-4
- 252 *Organic Chemistry II* 4 hrs. credit  
PREREQUISITE: Chemistry 251 with C or better; a trimester of college German is recommended. Continuation of Chemistry 251. Use of the chemical literature will be stressed. 4-4
- 261 *Biological and Physiological Chemistry* 3 hrs. credit  
PREREQUISITE: Natural Sciences 112. Chemical principles and calculations, properties of substances of biological importance. 3-2
- 291 *Special Projects and Seminars III* 1-4 hrs. credit
- 292 *Special Projects and Seminars IV* 1-4 hrs. credit

## ECONOMICS

- 251 *Principles of Economics I* 4 hrs. credit  
PREREQUISITE: History 161 and 162, or permission of the instructor. The allocation problems of every society with special emphasis on their solutions under the American capitalistic economy; preliminary analysis of the demand and supply activities of individuals, firms, groups, and governments; measuring national income and product, and explaining their fluctuations; monetary and banking institutions in relation to specialization and exchange, business cycles, and government fiscal and monetary policies. 4-0
- 252 *Principles of Economics II* 4 hrs. credit  
PREREQUISITE: Economics 251. The commodity markets: prices as causes and effects of supply and demand; determinants of consumer buying, and of the actions of firms as buyers and sellers; factor markets: wages, rent, and interest as special types of prices; the role of profits and profit expectations; from partial to general equilibrium; from static to dynamic analysis: growth and development problems; international trade and finance; alternative economic systems. 4-0

## ENGLISH

- 251 *Creative Writing* 3 hrs. credit  
PREREQUISITE: Humanities 112. Through analysis of various forms of writing and frequent compositions, the student is encouraged to develop according to his own interests and abilities. 3-0
- 271 *Dramatic Literature* 3 hrs. credit  
PREREQUISITE: Humanities 112. Designed to develop appreciation, this course is concerned with the nature, purpose, and methods of drama. Half the course is given to the reading of modern plays and half to plays of Shakespeare. 3-0
- 281 *Modern British and American Literature* 3 hrs. credit  
PREREQUISITE: Humanities 112. A study of the trends in the literature of England and the United States since 1900 through readings from the major writers. 3-0

## LANGUAGES

### FRENCH

- 111 *Elementary French* 4 hrs. credit  
PREREQUISITE: None. Basic grammatical construction, fundamentals of pronunciation with laboratory assignments, daily oral-aural practice, composition, reading, acquisition of French vocabulary. 4-0
- 112 *Elementary French* 4 hrs. credit  
PREREQUISITE: French 111 or one year of high school French. A continuation of French 111. Oral-aural practice continues with laboratory assignments, grammar principles, accompanied by exercises and written composition. Outside reading for comprehension of easy French reading material without translation. 4-0
- 211 *Intermediate French* 4 hrs. credit  
PREREQUISITE: French 112 or two years of high school French. Review and application of essential principles of French grammar by means of oral and written exercises and composition, pronunciation through oral and aural exercises and conversation, reading of French prose, outside reading to develop ability to read rapidly at sight. As far as possible conducted in French. 4-0
- 212 *Intermediate French* 4 hrs. credit  
PREREQUISITE: French 211 or three years of high school French. A continuation of French 211, with somewhat more emphasis on oral skill and conversation. 4-0

### GERMAN

- 111 *Elementary German* 4 hrs. credit  
PREREQUISITE: None. Fundamentals of German grammar and pronunciation. 4-0
- 112 *Elementary German* 4 hrs. credit  
PREREQUISITE: German 111 or one year of high school German. A continuation of German 111. 4-0



211 *Intermediate German* 4 hrs. credit

PREREQUISITE: German 112 or two years of high school German. Review and application of essential principles of German grammar by means of oral and written exercises and composition, pronunciation through oral and aural exercises and conversation, reading of French prose, outside reading to develop ability to read rapidly at sight. As far as possible conducted in German. 4-0

212 *Intermediate German* 4 hrs. credit

PREREQUISITE: German 211. A continuation of German 211, with special emphasis on rapid reading for students particularly interested in science. 4-0

JAPANESE

111 *Elementary Japanese* 4 hrs. credit

PREREQUISITE: None. Basic grammatical construction, fundamentals of pronunciation with laboratory assignments, daily oral-aural practice, composition, reading, acquisition of Japanese vocabulary. 4-0

112 *Elementary Japanese* 4 hrs. credit

PREREQUISITE: Japanese 111. A continuation of Japanese 111. Oral-aural practice continued with laboratory assignments, grammar principles, accompanied by exercises and written composition. Outside reading for comprehension of easy Japanese reading material without translation. 4-0

211 *Intermediate Japanese* 4 hrs. credit

PREREQUISITE: Japanese 112. Review and application of essential principles of Japanese grammar by means of oral and written exercises and composition, pronunciation through oral and aural exercises and conversation, reading of Japanese prose, outside reading to develop ability to read rapidly at sight. As far as possible conducted in Japanese. 4-0

212 *Intermediate Japanese* 4 hrs. credit

PREREQUISITE: Japanese 211. A continuation of Japanese 211, with somewhat more emphasis on oral skill and conversation. 4-0

RUSSIAN

111 *Elementary Russian* 4 hrs. credit

PREREQUISITE: None. Basic grammatical construction, fundamentals of pronunciation with laboratory assignments, daily oral-aural practice, composition, reading, acquisition of Russian vocabulary. 4-0

112 *Elementary Russian* 4 hrs. credit

PREREQUISITE: Russian 111. A continuation of Russian 111. Continuation of oral-aural practice with laboratory assignments, grammar principles, accompanied by exercises and written composition. Outside reading for comprehension of easy Russian reading material without translation. 4-0

211 *Intermediate Russian* 4 hrs. credit

PREREQUISITE: Russian 112. Review and application of essential principles of Russian grammar by means of oral and written exercises and composition, pronunciation through oral and aural exercises and conversation, reading of Russian prose, outside reading to develop ability to read rapidly at sight. As far as possible conducted in Russian. 4-0

- 212 *Intermediate Russian* 4 hrs. credit  
PREREQUISITE: Russian 211. A continuation of Russian 211, with somewhat more emphasis on oral skill and conversation. 4-0

### SPANISH

- 111 *Elementary Spanish* 4 hrs. credit  
PREREQUISITE: None. Grammatical constructions, accompanied by exercises and easy composition. Emphasis on pronunciation. Daily oral-aural practice with language laboratory assignments. 4-0
- 112 *Elementary Spanish* 4 hrs. credit  
PREREQUISITE: Spanish 111 or one year of high school Spanish. A continuation of Spanish 111. 4-0
- 211 *Intermediate Spanish* 4 hrs. credit  
PREREQUISITE: Spanish 112 or two years of high school Spanish. Reading of modern texts. Review and application of essential principles of grammar by means of oral and written exercises. Conversation. Outside reading to develop ability to read rapidly at sight. 4-0
- 212 *Intermediate Spanish* 4 hrs. credit  
PREREQUISITE: Spanish 211 or three years of high school Spanish. A continuation of Spanish 211. 4-0

### **GEOGRAPHY**

- 151 *Physical Geography I* 4 hrs. credit  
PREREQUISITE: None. Study of the natural environment which is important to man and his activities; introduction to maps and physical features; earth-sun-moon relationships; earth materials; landforms; drainage; and major natural resources. 3-2
- 152 *Physical Geography II* 4 hrs. credit  
PREREQUISITE: None. Continuation of 151. An introduction to weather and climate, soils and vegetation — their character, causes, significance and distribution; population distribution and characteristics. 3-2
- 161 *World Regional Geography* 4 hrs. credit  
PREREQUISITE: None. Essential Geographic characteristics and significant problems of the major regions of the world; cultural and natural resources of the nations of the world. 4-0
- 251 *Economic Geography* 4 hrs. credit  
PREREQUISITE: Geography 152 or 161; or consent of instructor. Geographic study of the world commodities and their regional aspects; land uses, extractive and manufacturing industries — their regional and cultural relationships; trade and communication. 4-0
- 262 *Climatology* 3 hrs. credit  
PREREQUISITE: 152 or consent of instructor. Analysis of climatic elements and controls; classification and distribution of climatic types; fundamentals of geophysics. 2-2

- 291 *Special Projects and Seminars* 1 - 4 hrs. credit  
Independent, informal study and research for superior students on a specific and significant geographical topic. May not be undertaken prior to completion of three trimesters of Geography courses. Consent of instructor required.

## GEOLOGY

- 151 *Physical Geology* 4 hrs. credit  
PREREQUISITE: None. A study of the materials and agents responsible for the development of topographic and structural features of the earth. Includes weathering, streams, glaciation, underground water and wind activity. Introductory study of common rocks and minerals. Introduction to maps. One field trip required. 3-2
- 152 *Historical Geology* 4 hrs. credit  
PREREQUISITE: Geology 151. A study of volcanism, diastrophism, and mountain building and their relationship to earth history. Includes successive stages in the development of North America as a typical continent, and the evolution of life. Interpretation of topographic maps and identification of invertebrate fossils. One field trip required. 3-2
- 271 *World Mineral Resources (Non-metallic)* 3 hrs. credit  
PREREQUISITE: Geology 151 and 152; permission of instructor required. A study of the origin and geographic distribution of petroleum, coal, building stones, lime and cement, clay, sand and gravel, salt and gypsum, fertilizers, gem stones, and other non-metallic minerals. Occasional field trips. 3-0
- 272 *World Mineral Resources (Metallic)* 3 hrs. credit  
PREREQUISITE: Geology 151 and 152; permission of instructor required. A study of the origin and geographic distribution of iron, copper, lead, zinc, aluminum, radioactive minerals, and other metallic resources. Occasional field trips. 3-0
- 291 *Special Projects and Seminars* 1 - 4 hrs. credit
- 292 *Special Projects and Seminars* 1 - 4 hrs. credit

## HISTORY

- 161 *Political, Social, and Economic History of Europe, 1300-1815* 4 hrs. credit  
PREREQUISITE: None. The Renaissance and Reformation; the rise of capitalism and national states; colonial expansion; the Enlightenment, the French Revolution, and the Napoleonic era. Frequent use of original source materials. 4-0
- 162 *Political, Social, and Economic History of Europe, 1815 to the Present* 4 hrs. credit  
PREREQUISITE: None. Nationalism; liberalism; socialism; imperialism; world wars; international organization; fascism and communism. Frequent use of original source materials. 4-0
- 251 *History of the United States to 1865* 3 hrs. credit  
PREREQUISITE: None. History of the United States from its immediate European backgrounds to the end of the Civil War. Some emphasis on social history and American foreign policy. 3-0

252 *History of the United States from 1865 to the Present* 3 hrs. credit  
 PREREQUISITE: None. A continuation of History 251. United States history from the end of the Civil War to the present time. Some emphasis on social history and American foreign policy. 3-0

257 *Russia Since 1900 (Same as Political Science 257)* 3 hrs. credit  
 PREREQUISITE: History 161 and 162. A critical analysis of the political, social and economic institutions of imperialist and Soviet Russia pertinent to an understanding of the present Soviet reality. 3-0

258 *The Pacific-Indian Ocean Basin* 4 hrs. credit  
 PREREQUISITE: A college course in political science or history. A study of the countries touching the Pacific and Indian Oceans, their relations to each other and to the United States. Presents the geography of the area as a whole, followed by more detailed study of the recent history and the economic, social, and political situations of Asia, the Near East, South America, and the United States. Develops the relations of these areas with each other. 4-0

## MATHEMATICS

161 *Algebra, Analytic Geometry, and Calculus* 4 hrs. credit  
 PREREQUISITE: 3½ years of college preparatory mathematics and demonstrated competence; Natural Sciences 111 must be taken concurrently, if not taken earlier. Brief review of high school algebra; forms of equation of straight lines; the derivative of a function; limits; continuity; law of the mean; antiderivatives; finding areas by antidifferentiation; differentiation of algebraic functions; differentiation of trigonometric and inverse trigonometric functions; maxima and minima; differentials. 4-0

162 *Analytic Geometry and Calculus* 4 hrs. credit  
 PREREQUISITE: Math 161 with a C or better. Definite integrals; the mean-value theorem; inequalities; families of curves; translation and rotation of axes; logarithmic and exponential functions; hyperbolic functions; inverse hyperbolic functions; techniques of integration; applications of integration; polar coordinates. 4-0

261 *Analytic Geometry and Calculus* 4 hrs. credit  
 PREREQUISITE: Math 162 with a C or better. Vector algebra; differentiation of vector functions; L'Hospital's Rule; infinite series and Taylor's formula; convergence; Newton's method; determinants and linear systems; analytical geometry of three dimensions; partial differentiation; multiple integrals; differential equations. 4-0

262 *Differential Equations, Linear Algebra, and Probability* 4 hrs. credit  
 PREREQUISITE: Math 261 with a C or better. Separable, homogeneous, exact, linear equations; special forms; linear equations with constant coefficients; undetermined coefficients and variations of parameters; introduction to matrix algebra; vector spaces and linear transformations; orthogonal transformations; elementary combinatorial probability; random variables and moments; statistical tests; curve fitting. 4-0

291 *Special Projects and Seminars I* 1 - 4 hrs. credit

292 *Special Projects and Seminars II* 1 - 4 hrs. credit



## PHILOSOPHY

- 251 *Introduction to Philosophy* 3 hrs. credit  
Open to sophomores. Designed to acquaint the student with some of the fundamental questions that have confronted mankind and the way in which these questions have been dealt with by the most profound thinkers of the past and present. 3-0
- 261 *Logic* 4 hrs. credit  
Sophomore standing or second trimester freshmen C<sup>+</sup> or better. Aims to develop effective thinking through the study of classical logic. Includes the methods of clear argumentation, definition, the assessment of evidence and a brief introduction to inductive logic and scientific method. 4-0

## PHYSICS

- 251 *Physics I* 5 hrs. credit  
PREREQUISITE: High school physics or its equivalent, Math 161 or its equivalent; Natural Sciences 111 must be taken concurrently, if not taken earlier. Mechanics, heat, and sound. 4-3
- 252 *Physics II* 5 hrs. credit  
PREREQUISITE: Physics 251 and Math 162. A continuation of Physics 251. Magnetism, electricity, light, and modern physics. 4-3
- 261 *Electricity and Magnetism* 4 hrs. credit  
PREREQUISITE: Physics 252 and Math 262 (the latter may be taken concurrently). Gauss' Law, Maxwell's equations, dielectric properties, electrical measurements, electronics. 3-3
- 271 *Optics*  
PREREQUISITE: Physics 252. Physical and geometrical optics, optical rotation, birefringence, optical and spectroscopic instruments. 3-3
- 281 *Thermodynamics* 4 hrs. credit  
PREREQUISITE: Physics 252. Carnot cycle, laws of thermodynamics, thermodynamic functions, Onsager's equations, thermodynamics of the steady state. 4-0
- 291 *Special Projects and Seminars I* 1-4 hrs. credit
- 292 *Special Projects and Seminars II* 1-4 hrs. credit

## POLITICAL SCIENCE

- 251 *Comparative Government* 4 hrs. credit  
PREREQUISITE: A college course in political science or history. Deals principally with governments of U. S., Great Britain, France, Soviet Russia, with some reference to governments of Spain, Sweden, and China. Emphasis on theories of democracy, fascism, communism, and socialism. 4-0
- 253 *International Relations* 4 hrs. credit  
PREREQUISITE: A college course in political science or history. Introduction to the study of politics among nations, designed to provide a working knowledge of concepts necessary to understanding current world affairs such as the state system, colonialism, imperialism, and regional arrangements. Includes a survey of international organizations. 4-0

- 257 *Russia Since 1900 (Same as History 257)* 3 hrs. credit  
PREREQUISITE: History 161 and 162. A critical analysis of the political, social and economic institutions of imperial and Soviet Russia pertinent to an understanding of the present Soviet reality. 3-0

## PSYCHOLOGY

- 251 *General Psychology* 4 hrs. credit  
PREREQUISITE: Open to sophomores and to second trimester freshmen with a C+ or better average. Principles underlying experience and behavior, designed to give an understanding of human behavior as affected by learning, motivation, emotion, intelligence, perception, personality, and interpersonal relationships. 4-0
- 256 *Advanced General Psychology* 3 hrs. credit  
PREREQUISITE: Psychology 251. Designed for students who will major in psychology and those who wish to explore more fully the fundamental principles of psychological science. 3-0
- 262 *Child Psychology* 3 hrs. credit  
PREREQUISITE: Psychology 251. Facts and generalizations concerning growth of children from conception to adolescence; deals with physical, mental, social, and emotional development. 3-0
- 271 *Psychology of Adjustment* 3 hrs. credit  
PREREQUISITE: Psychology 251. Application of psychological principles to interpersonal behavior; study of factors in the development of constructive personal adjustment as influenced by human relations in home, school, and community. 3-0

## SOCIOLOGY

- 251 *Principles of Sociology* 3 hrs. credit  
PREREQUISITE: None. The scientific study of human relationship and social institutions. Includes evaluation of current literature as a reflection of man's culture and social activities. 3-0
- 252 *Social Problems* 3 hrs. credit  
PREREQUISITE: Sociology 251 or Psychology 251. A study of the possible causes and solutions of social problems in a dynamic society. 3-0

## COURSE OFFERINGS FOR THE SCHOOL OF NURSING

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- 101 *Orientation to Nursing*** **1 hr. credit**  
 PREREQUISITE: None. Introduction to nursing as a profession. A general survey of nursing history, past and present. Designed to help the student nurse understand the broad aspect of ethics as related to the nursing profession and to acquaint the student with the social responsibilities of a professional person. 1-0
- 111 *Fundamentals of Nursing*** **3 hrs. credit**  
 PREREQUISITE: None. The fundamental principles of nursing applicable to the total care of the patient as they relate to basic physical, emotional, mental and spiritual needs. Understanding the individuality of the patient is stressed throughout the course in presentation of nursing content and in guiding the student during his practice in planning and giving nursing care. 2-4
- 112 *Fundamentals of Nursing II*** **3 hrs. credit**  
 PREREQUISITE: Nursing 111. Continuation of Nursing 111. 2-4
- 211 *Medical-Surgical Nursing*** **10 hrs. credit**  
 PREREQUISITE: Nursing 111 and 112. Comprehensive nursing care of the medical-surgical patient developed by theory and practice. The patient's needs analyzed in respect to the individual, his family and his community. Plans for patient care are developed, implemented and evaluated both in classroom and clinical situations. The nursing care of the specialties — gynecology, dermatology, urology, eye, ear, nose, and throat, communicable diseases, orthopedics, operating room, and emergency rooms are integrated. Nutrition and diet therapy are integrated to help the student be cognizant of dietary needs with implications to the socio-economic and cultural patterns of the individual. Pharmacology includes the origin, action, toxicity, preparation and administration of drugs as applicable to the clinical areas. 6-16
- 212 *Medical-Surgical Nursing II*** **10 hrs. credit**  
 PREREQUISITE: Nursing 211. Continuation of Nursing 211. 6-16
- 311 *Maternal and Child Nursing I*** **10 hrs. credit**  
 PREREQUISITE: Nursing 111 and 112. Nursing care of mother and newborn in all phases of the maternity cycle and the neonatal period, growth and development from infancy through adolescence, and care of the child who is ill. The social, psychological, and economic implications of the newborn and/or illness to the child and his family are emphasized. Pharmacology includes origin, action, toxicity, preparation, and administration of drugs as applicable to the clinical areas. Community resources for promotion of the mother's, the infant's, and the child's welfare are utilized. 6-16
- 312 *Maternal and Child Nursing II*** **10 hrs. credit**  
 PREREQUISITE: Nursing 311. Continuation of Nursing 311. 6-16
- 411 *Psychiatric Nursing*** **7 hrs. credit**  
 PREREQUISITE: Psychology 251 and 262. Guided learning experiences in the application of principles of psychiatric nursing as provided in a hospital for the mentally ill and in allied community agencies. Interpersonal relationships explored as they influence patient care. 4-18

**412 Team Leadership****5 hrs. credit**

Principles of supervision and of teaching auxiliary personnel with emphasis on the supervisory aspects in the team leadership role. Relationship of team leader to the organization and all personnel emphasized. Values in the give-and-take relationship of the work situation explored and enhanced. 2-18

**415 The Aging Process****4 hrs. credit**

Guided learning experiences in the application of principles of nursing to the care of aged in community agencies. Problems explored as they affect our aging population. 2-12

**416 Professional Adjustments****2 hrs. credit**

Emphasis placed on nursing problems from the perspective of evolving professional demands. Career selections, advanced educational program, professional opportunities and preparation are discussed. 2-0

## COURSE SEQUENCE — SCHOOL OF NURSING

	<u>Credit</u>
<b>FIRST TRIMESTER</b>	
Foundations of Natural Science I	4
Physiological Anatomy -----	3
General Psychology -----	4
Orientation to Nursing -----	1
Fundamentals of Nursing I -----	3
	<u>15</u>

**SECOND TRIMESTER**

Foundations of Natural Science II	4
Physiological Anatomy -----	4
Microbiology -----	3
Fundamentals of Nursing II -----	3
	<u>14</u>

**THIRD TRIMESTER**

Chemistry (Physiological and Biological) -----	3
Child Psychology -----	3
Medical — Surgical Nursing I ---	10
	<u>16</u>

**FOURTH TRIMESTER**

Foundations of Social Science I --	4
Medical — Surgical Nursing II ---	10
	<u>14</u>

	<u>Credit</u>
<b>FIFTH TRIMESTER</b>	
Foundations of Social Science II -----	4
Maternal and Child Nursing I -----	10
	<u>14</u>

**SIXTH TRIMESTER**

Foundations of Western Civilization I --	4
Maternal and Child Nursing II -----	10
	<u>14</u>

**SEVENTH TRIMESTER**

Foundations of Western Civilization II	4
Psychiatric Nursing -----	7
Electives -----	6
	<u>14</u>

**EIGHTH TRIMESTER**

Foundations of American Culture -----	4
The Aging Process -----	4
Electives -----	3
	<u>14</u>

**NINTH TRIMESTER**

Foundations of Non-Western Culture ---	4
Team Leadership -----	5
Professional Adjustments -----	2
Electives -----	3
	<u>14</u>

***Distribution of Course Offerings:***

Foundation Courses -----	32 Hours
Intensive Sciences -----	20
Electives -----	12
Nursing Courses -----	65
Total -----	<u>129 Hours</u>



**COURSE OFFERINGS FOR THE  
COLLEGE OF COMMUNITY SERVICE**

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**ACCOUNTING**

- 111 *Introductory Accounting* 3 hrs. credit**  
PREREQUISITE: None. An introduction to accounting as first applied to a sole proprietorship. The meaning and purpose of accounting; statements; theory of debits and credits; trial balance; prepaid, unearned, and accrued items; depreciation and valuation of accounts receivable. Journalizing includes use of the general, purchase, sales, cash, and combination journals. 3-0
- 112 *Introductory Accounting* 3 hrs. credit**  
PREREQUISITE: Accounting 111. A continuation of Accounting 111. Includes the voucher system; payroll, sales, property and income taxes; partnership formation and procedures; corporation formation, records, surplus, dividends, stocks and bonds; departmental accounting; introduction to manufacturing and cost accounting. 3-0
- Note: Credit will not be given for both 111 and 211 or 112 and 212.
- 221 *Punched Card and Machine Accounting* 3 hrs. credit**  
PREREQUISITE: Accounting 111 and 112 or equivalent. Punched card and posting machine techniques; accounts receivable, sales, and billing; accounts payable, purchases, and payment; inventory, payroll; and specialized procedures. Introduction to electronic processing. 2-2
- 222 *Punched Card Systems and Procedures II* 3 hrs. credit**  
PREREQUISITE: Accounting 221. Advanced principles of punched card techniques applied to business data processing with emphasis on systems and procedures and including laboratory problems. 3-0
- 251 *Principles of Accounting* 4 hrs. credit**  
PREREQUISITE: None. An introduction to accounting in which the approach is made through the corporate form of business. Methods of recording, reporting, and interpreting the financial data of the business unit are stressed. Includes the income statement and position statement; general ledger; accounts; journals, subsidiary ledgers; cash records; recording of revenues and receivables; adjusting and closing entries. 4-2
- 252 *Principles of Accounting* 4 hrs. credit**  
PREREQUISITE: Accounting 251. A continuation of Accounting 251. Deals with accounts and notes receivable; discounted notes receivable; discounted notes and bills; merchandising and manufacturing accounts; fixed assets, depreciation, and depletion; consignments and installment sales; partnership; corporate capital accounts; dividends, retained earnings; bonds; preparation and interpretation of financial statements. Included are topics often studied in intermediate courses. 4-2
- 253 *Cost Accounting* 3 hrs. credit**  
PREREQUISITE: Accounting 112 or 252. A study of the field of cost accounting; methods of handling materials, labor costs, manufacturing expenses; job order cost accounting; process cost accounting; standard cost accounting and the completion of a job order practice set. 3-0

- 255 *Federal Tax Accounting* 3 hrs. credit  
 PREREQUISITE: Accounting 112 or 252. A study of the federal income tax laws. Major emphasis upon tax laws as they relate to individuals and small business. Preparation of the individual tax return. 3-0
- 257 *Social Security and Payroll Accounting* 3 hrs. credit  
 PREREQUISITE: Accounting 111 or 251. Federal Social Security laws and State Unemployment Compensation laws as applied to business. A brief survey of other Michigan tax laws included. 3-0
- 259 *Auditing Theory and Procedure* 3 hrs. credit  
 PREREQUISITE: Accounting 112 or 252. The principles and procedures of auditing, giving attention to auditing concepts, professional ethics and responsibility, the audit program, auditing procedures, working papers, and simple audit reports. 3-0

## ARCHITECTURE

- 105 *Details* 3 hrs. credit  
 PREREQUISITE: None. Elements of planning and construction of small homes. Lettering, symbols and conventions, footings, foundations, doors, windows, cornices, roofs, sections, pre-fab construction, specifications, and cost estimates. 0-6
- 106 *Small Home Planning* 3 hrs. credit  
 PREREQUISITE: Architecture 105. Development of complete plans for small home, including site, foundation, floor plans, elevations, typical sections, details, specifications, rendered perspective, and cost estimate. 0-6
- 155 *Projections* 2 hrs. credit  
 PREREQUISITE: None. Basic graphical projection as applied to plans, sections, and elevations, intersections and developments, isometric drawings. 0-4
- 156 *Graphics* 2 hrs. credit  
 PREREQUISITE: Architecture 155. Problems in perspective, shades and shadows. 0-4
- 205 *Architectural Problems* 3 hrs. credit  
 PREREQUISITE: Architecture 106. Landscaped, scale model from student's plans for class demonstration. Special problems and reports. 0-6
- 206 *Commercial Problems* 3 hrs. credit  
 PREREQUISITE: Architecture 205. Design of small commercial building including all architectural drawings, details, specifications, and rendered perspective. 0-6

## ART

- 111 *Beginning Freehand Drawing* 3 hrs. credit  
 PREREQUISITE: None. A beginning course in drawing designed for all students interested in creative expression in pencil, pen and ink, and wash. Representation and composition studies by drawing simple forms in line and value. Introduction to perspective. Lab fee \$5.00. 0-6

- 112 *Advanced Drawing and Composition* 3 hrs. credit  
 PREREQUISITE: Art 111. Designed to give further understanding of composition and to develop creative ability in drawing. The representation of form with emphasis on values and textures as well as the study of abstract composition. Problems using charcoal. Lab fee \$5.00. 0-6
- 113 *Art Education (Elementary)* 3 hrs. credit  
 PREREQUISITE: None. Introduction to art for prospective teachers. Develops the ability to stimulate the creative interests of children in art. Acquaints the student with a variety of methods and materials adjusted to various grade levels. Lab fee \$5.00. 0-6
- 114 *Art Education (Secondary)* 3 hrs. credit  
 PREREQUISITE: None. A continuation of Art 113. Further art experiences related more especially to upper grade teaching. Additional investigation of the theories of art education and creative growth of children. Lab fee \$5.00. 0-6
- 115 *Introduction to Design* 3 hrs. credit  
 PREREQUISITE: None. Experimentation with the basic elements of design: line, form, space, value, texture and color. A variety of media used in both two and three dimensions, using abstract and representational approach. Lab fee \$5.00. 0-8
- 116 *Advanced Design* 3 hrs. credit  
 PREREQUISITE: Art 115. A series of projects and experiments using the basic elements of design in a variety of media, both two and three dimensional. Special interest in the fields of commercial art: product, architectural, interior and advertising design. Lab fee \$5.00. 0-8
- 117 *Painting* 3 hrs. credit  
 PREREQUISITE: Art 111. Experimentation in pastels, oil, and other media. Exploring techniques, composition, and color, based on studies in still life, landscape and the figure. Recommended to students interested in art as a hobby, as well as for art majors. Lab fee \$5.00. 0-6
- 121 *Beginning Ceramics* 3 hrs. credit  
 PREREQUISITE: None. Introductory study of ceramic clay, glazes and their application, techniques of construction, and direction on the potter's wheel. Lab fee \$5.00. 0-6
- 151 *History and Appreciation* 3 hrs. credit  
 PREREQUISITE: None. A general survey of Western Art from prehistoric times through the 16th century. Deals with outstanding masterpieces and representative artists of the Egyptian, Greek, Roman, Romanesque, Gothic, and Renaissance periods. The emphasis is on the architecture and sculpture of those periods. 3-0
- 152 *Art History and Appreciation* 3 hrs. credit  
 PREREQUISITE: None. A continuation of Art 151. A general survey of the History of Western Art from the Renaissance through Baroque, Neo-Classicism, Romanticism, Impressionism, Expressionism, and the various modern schools. The emphasis is on the painting of those periods. 3-0

218 *Advanced Painting* 3 hrs. credit  
PREREQUISITE: Art 117. Still life, landscape, and non-objective problems in the various techniques of water color, tempera, and oil. Recommended to students interested in art as a hobby, as well as for art majors. Lab fee \$5.00. 0-6

222 *Sculpture* 3 hrs. credit  
PREREQUISITE: None. Laboratory experiences in sculpture and sculptural forms with particular attention given to techniques of forming and building — plus the experience of casting in such media as plaster and cement. Lab fee \$5.00. 0-6

## BIOLOGY

111 *General Biology* 4 hrs. credit  
PREREQUISITE: None. Lectures, discussions, field and laboratory investigations in the significant areas of science, botany, zoology, and physiology. Intended for students in liberal arts, education, and biological science fields. Lab fee \$10.00. 3-4

112 *General Biology II* 4 hrs. credit  
PREREQUISITE: Biology 111, or permission of the instructor. A continuation of Biology 111. Emphasis upon human biology, independent investigations, and applications to human affairs. Lab fee \$10.00. 3-4

113 *Health and Hygiene* 3 hrs. credit  
PREREQUISITE: None. Designed to create appreciation for the significance of health education for college students; to develop a better understanding of health; and to encourage more effective living in personal and community relationships. 3-0

121 *General Zoology* 4 hrs. credit  
PREREQUISITE: High school Biology or Science recommended. Designed for students planning to concentrate in science. Deals with classification, structure, function, environmental relations, origin, and development of animals. Illustrations and application of the scientific method. Lab fee \$10.00. 2-6

131 *General Botany* 4 hrs. credit  
PREREQUISITE: High school Biology or Science recommended. Study of morphology, activities, evolutionary relationships, and economic importance of major plant groups. Lab fee \$10.00. 2-6

141 *General Physiology* 4 hrs. credit  
PREREQUISITE: Biology 111 or equivalent. A study of the body and its structures, and a knowledge of the correlation of the various systems in the body. Lab fee \$10.00. 3-2

211 *Microbiology* 4 hrs. credit  
PREREQUISITE: Biology 111, 112, or 121 and Chemistry 111. Deals with the fundamental principles and laws of bacteriology and their applications. Special attention will be given to the study of representative bacteria, molds and other allied micro-organisms. Lab fee \$10.00. 2-6

221 *Comparative Vertebrate Anatomy* 4 hrs. credit  
PREREQUISITE: Biology 121 completed with minimum grade of C. Evolution of the larger taxonomic groups of chordates and a comparative study of their gross morphology. Special emphasis on dissection of various chordates and their relationship. Lab fee \$10.00. 2-6



## BUSINESS

- 105 *Beginning Typewriting* 2 hrs. credit  
PREREQUISITE: None. A mastery of the keyboard and practice in the basic skills and techniques of the touch system of typewriting, for personal and vocational use. 2-2
- 106 *Intermediate Typewriting* 2 hrs. credit  
PREREQUISITE: Business 105 or its equivalent. Vocational training for business. Special drills for perfecting the techniques necessary for accuracy and speed in typewriting, particularly in business letters, tabulations, reports, and other forms used in business offices. Training in the use of transcribing machines and duplication processes. 2-2
- 107 *Advanced Typewriting* 2 hrs. credit  
PREREQUISITE: Business 106 or its equivalent. The planning of typical business projects, at a rate equivalent to that expected in an office. Advanced drill and copy work to develop speed and accuracy. Additional training in the use of transcribing machines. 2-2
- 110 *Beginning Shorthand* 4 hrs. credit  
PREREQUISITE: None. Basic principles of Gregg Shorthand Simplified, including a study of brief forms and elementary vocabulary; development of skill in reading, and fluency in writing; dictation of practiced and new materials; pre-transcription training. 4-1
- 111 *Intermediate Shorthand* 4 hrs. credit  
PREREQUISITE: Business 105 and 110 or their equivalent. Must be accompanied by Business 106 or 107. Acquisition of speed in taking new-matter dictation; development of speed and accuracy in transcription skills. Includes English grammar review, vocabulary study, spelling. 4-1
- 112 *Dictation and Transcription* 4 hrs. credit  
PREREQUISITE: Business 111. Emphasis placed on the development of skills in handling more difficult vocabulary; increase in shorthand dictation speed through a process of automatization and good work habits; increase in speed and accuracy of transcription, and the development of special techniques in handling office dictation. Emphasis on transcribing mailable letters through improvement of shorthand, typewriting, and English. 4-0
- 113 *Speed Building and Specialized Shorthand* 3 hrs. credit  
PREREQUISITE: Business 112 or consent of department chairman. To develop high speed in taking and transcribing dictation; special vocabularies for conference and court reporting, medical secretaries, legal secretaries, chemical secretaries, according to the career interest of the student. 3-0
- 117 *Transportation and Traffic Management, I* 3 hrs. credit  
PREREQUISITE: None. Designed to provide the information, practice, and techniques necessary to qualify for position in the Traffic Management Divisions of larger industry and carrier companies. Covers the history of American Transportation Systems, developments leading to Federal regulation of carriers other than railroad, classification of freight, principles of freight rates and tariffs, shipping documents and their application in freight claims. 3-0

- 118 *Transportation and Traffic Management, II*** 3 hrs. credit  
**PREREQUISITE:** Business 117. A continuation of Transportation and Traffic Management 117. Deals with tariff circulars, construction and filing of tariffs, freight rates and tariffs, terminal facilities and switching, demurrage, transit privileges, warehousing and distribution, materials handling and packaging. See Business 217 and 218 for advanced courses. 3-0
- 120 *Machine Calculation*** 2 hrs. credit  
**PREREQUISITE:** Students weak in arithmetic should take Mathematics 105 before electing this course. A laboratory course dealing with the basic operations of such calculating machines as Friden, Monroe, Marchant, Compotometer, Burroughs, and the full keyboard and ten-key adding machines. May be taken in the same trimester with Business 121. 2-3
- 121 *Machine Calculation*** 2 hrs. credit  
**PREREQUISITE:** Business 120. A continuation of Business 120, with emphasis placed on vocational efficiency and speed of manipulation on the key-driven calculator. Five hours weekly. May be taken in the same trimester with Business 120 or Business 122. 2-3
- 122 *Machine Calculation*** 2 hrs. credit  
**PREREQUISITE:** Business 121. Advanced study in machine calculation. Designed particularly for specialization. Five hours weekly. May be taken in the same trimester with Business 121. 2-3
- 135 *Filing*** 1 hr. credit  
**PREREQUISITE:** None. Presents basic filing rules and provides practical application on exercises involving the alphabetic and numeric systems of filing. One or more units (Business 135, 136, 137) may be taken in one trimester. 1-0
- 136 *Filing and Records Management*** 1 hr. credit  
**PREREQUISITE:** Business 135. A continuation of the study of filing systems to include geographic, subject, and subject-decimal filing. Emphasis placed on the study of filing as a basic tool of management. Consideration is given to equipment and supplies, use and control of records, transfer and disposal of records. One or more units (Business 135, 136, 137) may be taken in one trimester. 1-0
- 137 *Advanced Filing and Records Management*** 1 hr. credit  
**PREREQUISITE:** Business 136. A continuation of the study of records management and specific filing problems, with outside readings, field trips, oral and written reports. One or more units (Business 135, 136, 137) may be taken in one trimester. 1-0
- 140 *Introduction to Data Processing Machines*** 3 hrs. credit  
**PREREQUISITE:** None. Provides student with a working knowledge of the scope of data processing machines as applied to business functions. No wiring or operation is included in this basic course. 3-0
- 141 *Data Process Machine Operation*** 5 hrs. credit  
**PREREQUISITE:** Business 140. Discussion of machines, card designs, wiring, followed by actual operation of machine involved. Machines such as the sorter, collator, reproducer, basic printing, and basic accounting machines will be included. 2-6

- 145 *Cooperative Office Education* 3 hrs. credit  
 PREREQUISITE: Employable skill and consent of coordinator. Students placed in various school or business offices where they gain on-the-job experience. The work is supervised by the coordinator. Class meets with the coordinator one hour each week. 1-15
- 146 *Cooperative Office Education* 3 hrs. credit  
 PREREQUISITE: Business 145. A continuation of Business 145. 1-15
- 148 *Cooperative Retail Education* 3 hrs. credit  
 PREREQUISITE: Employable skills and consent of coordinator. Students work in community retail stores. Their work is supervised by a coordinator. Class meets with the coordinator, one hour each week. 1-15
- 149 *Cooperative Retail Education* 3 hrs. credit  
 PREREQUISITE: Business 148. A continuation of Business 148. 1-15
- 150 *Orientation to Medical Office Work* ½ hr. credit  
 PREREQUISITE: None. Introduction to the medical secretarial opportunities and responsibilities. A joint effort of the Medical Assistants and the College to acquaint students with the work of the medical secretary. 1-0
- 151 *Orientation to Public Health Vocations* ½ hr. credit  
 PREREQUISITE: None. Introduction to the public agencies closely connected with the work of the medical secretary. 1-0
- 160 *Business Organization* 3 hrs. credit  
 PREREQUISITE: None. Acquaints student with principles, problems and practices of business and industry. Consideration given to the areas of organization, management, labor, production, markets, finance, and insurance. Designed also to help business students select a field of specialization. 3-0
- 175 *Advertising* 3 hrs. credit  
 PREREQUISITE: None. A study of the basic elements of advertising. Special emphasis placed on the investigation of economic and social aspects of advertising, media selection, and package design. Trade names, marks, and slogans discussed. 3-0
- 180 *Salesmanship* 3 hrs. credit  
 PREREQUISITE: None. Deals with the fundamentals of selling. Includes analyzing the product; evaluation of customer's needs, desires, and buying motives; the application of sales procedures. Provides training in sales techniques and in the development of a sales personality. 3-0
- 217 *Transportation and Traffic Management, III* 3 hrs. credit  
 PREREQUISITE: At least one trimester of Transportation and Traffic Management or its equivalent. A continuation of Transportation and Traffic Management 117-118, including through routes and rates, milling in transit, technical tariff and rate interpretation, overcharges and undercharges, losses and damages, and a review of decisions of the Inter-State Commerce Commission. 3-0

- 218 *Transportation and Traffic Management*** 3 hrs. credit  
 PREREQUISITE: Business 217. A continuation of Transportation and Traffic Management 217, including evolution of the Interstate Commerce Act, construction of the Interstate Commerce Act, its interpretation and application, procedures and practice before the Interstate Commerce Commission, statutory authority for awarding damages, and a review of decisions of the Inter-State Commerce Commission. 3-0
- 230 *Nursing Arts*** 3 hrs. credit  
 PREREQUISITE: Business 150 and Business 151, at least one trimester of Biology, or consent of Chairman of Business Department. Designed to provide knowledge of Nursing Arts that will enable the secretary to work cooperatively and efficiently with doctor, members of staff, patients; to train the student in the simpler techniques of nursing so that she may assist the doctor when it is not possible for a nurse to be in attendance; to provide the secretary with an appreciation of medical care, so that she may interpret, accurately to the public, the health processes in her community. 2-2
- 231 *Orientation to the Medical Laboratory*** 3 hrs. credit  
 PREREQUISITE: Business 230, or consent of the Chairman of the Business Department. Lectures, demonstrations, and laboratory experience to familiarize the student with laboratory procedures commonly used in the medical office. Special emphasis on terminology used in reporting findings; mixing and standardizing common solutions and reagents. An acquaintanceship with microbiology and bacteriology; qualitative urinalysis, hematology, microscopical examination of smears and sediments, BMR and EKG determinants. 2-2
- 240 *Business Practices*** 3 hrs. credit  
 PREREQUISITE: Business 106, or the equivalent, and English 121. Business Practices is recommended for all business students. It coordinates the specialized skills and knowledge acquired in the accounting, general business, management, clerical, advertising, retailing, and transportation curricula. The importance of the office in today's economy and the specific office service units are studied from the managerial and office employee's point of view. Stress is placed upon the human relations element as it is applied to efficient, harmonious office procedures in the modern business office. Office practices integrated primarily through the completion of projects and through the Case Study approach. 3-0
- 245 *Cooperative Office Education*** 3 hrs. credit  
 PREREQUISITE: Business 146. A continuation of Business 146. 1-15
- 246 *Cooperative Office Education*** 3 hrs. credit  
 PREREQUISITE: Business 245. A continuation of Business 245. 1-15
- 248 *Cooperative Retail Education*** 3 hrs. credit  
 PREREQUISITE: Business 149. A continuation of Business 149. 1-15
- 249 *Cooperative Retail Education*** 3 hrs. credit  
 PREREQUISITE: Business 248. A continuation of Business 248. 1-15
- 250 *Business Law*** 3 hrs. credit  
 PREREQUISITE: None. A study of contracts, negotiable instruments, employment, bailments, agency, and personal property. 3-0



- 251 *Business Law* 3 hrs. credit  
 PREREQUISITE: None. A study of sales, insurance, real property, trusts, partnerships, and corporations. 3-0
- 265 *Credit and Collections* 3 hrs. credit  
 PREREQUISITE: None. A practical and detailed study of the meaning and importance of credit. Among the areas covered are: the extent of retail credit; source of credit information; legal aspects, policies and procedures; and collection problems. Retail and mercantile credit, and collections, are approached primarily from the viewpoint of the management of credit operation. 3-0
- 270 *Marketing* 3 hrs. credit  
 PREREQUISITE: None. An introduction to the functional aspects of marketing; its institutions; price determination, merchandising, and distribution of products. 3-0
- 280 *Buying and Store Management* 3 hrs. credit  
 PREREQUISITE: Accounting 253. Designed to train students in the analysis of management problems and the synthesis of solutions. The theories of management practices are discussed and the fundamentals of administrative, executive, and staff management are explained. Emphasis is placed on the preparation of essential information required by management for decision making. 3-0
- 285 *Problems of Retail Merchandising* 3 hrs. credit  
 PREREQUISITE: Business 180 and Business 270. A study of retail selling and the aspects of increasing sales through promotion and advertising. Buying, merchandise planning, marking merchandise, pricing for profit, and store accounting are discussed. 3-0

## CHEMISTRY

- 111 *General and Inorganic Chemistry* 4 hrs. credit  
 PREREQUISITE: High school chemistry or Chemistry 81 and one year of high school algebra with satisfactory placement test scores. For students in chemical engineering, agriculture, nursing, pre-dentistry, pre-medicine, medical technology, pre-veterinary, pre-forestry, home economics, and related curricula of chemistry. Includes laws of chemical combination, states of matter, atomic and molecular structure, physical and chemical properties of matter. Lecture, quiz, and laboratory. Lab fee \$10.00. 4-3
- 112 *General and Inorganic Chemistry* 4 hrs. credit  
 PREREQUISITE: Chemistry 111. A continuation of Chemistry 111. Descriptive study of metals and non-metals; further study of principles. Recommended for students desiring advanced study in chemistry. Lecture, quiz, and laboratory. Lab fee \$10.00. 4-3
- 115 *Engineering Problems* 1 hr. credit  
 PREREQUISITE: Chemistry 111 with C or better, and 1½ years of high school algebra. Intended to familiarize the student with problems in equilibrium, titration, electrochemistry and redox reactions. Required for engineers not taking Chemistry 112 or 122. 1-0

- 122 *Inorganic Chemistry and Qualitative Analysis* 5 hrs. credit  
 PREREQUISITE: Chemistry 111 and consent of Chairman of Chemistry Department. A continuation of general chemistry with emphasis on semi-micro qualitative analysis for laboratory work. Lab fee \$10.00. 4-6
- 205 *Organic Chemistry* 4 hrs. credit  
 PREREQUISITE: Chemistry 112. A first course in the basic principles of organic chemistry, dealing with the carbon compounds of the aliphatic series. Fills the requirements for medicine, dentistry, pharmacy, agriculture, home economics, and other related curricula. 4-0
- 207 *Organic Chemistry Laboratory* 2 hrs. credit  
 PREREQUISITE: Chemistry 222. Preparation of a number of typical organic compounds and determination of their physical constants. Lab fee \$10.00. 0-8
- 211 *Organic Chemistry* 4 hrs. credit  
 PREREQUISITE: Chemistry 112 or 122 with C or better. First trimester of a 2-trimester course emphasizing mechanism and principles of organic reactions, both aliphatic and aromatic. Recommended for chemists, chemical engineers, pharmacists. Lab fee \$10.00. 4-3
- 212 *Organic Chemistry* 4 hrs. credit  
 PREREQUISITE: Chemistry 211 with C or better. Continuation of Chemistry 211. Laboratory includes some qualitative organic analysis. Lab fee \$10.00. 4-3
- 221 *Qualitative Analysis* 4 hrs. credit  
 PREREQUISITE: Chemistry 112. Explanation of laboratory procedure in terms of the principles of general chemistry. Semi-micro laboratory procedure involves identification of common metals through appropriate unknowns; also the identification of common acid groups. Lab fee \$10.00 3-6
- 222 *Quantitative Chemistry* 4 hrs. credit  
 PREREQUISITE: Chemistry 122 or 221. Knowledge of common logarithms essential. Theory and practice of volumetric and gravimetric analysis. Major emphasis on volumetric analysis. Lab fee \$10.00. 3-8
- 223 *Quantitative Chemistry* 4 hrs. credit  
 PREREQUISITE: Chemistry 122 or 221. Similar to Chemistry 222 but adapted to the needs of medical technology students. Not accepted for chemistry or pre-medicine majors. Lab fee \$10.00. 3-8

## DRAWING

- 105 *Industrial Drafting* 3 hrs. credit  
 PREREQUISITE: None. Elements of orthographic projection in the mechanical, structural, and electrical fields. Lettering, use of instruments, sketching, dimensioning, and details. Field trips. 0-6
- 106 *Industrial Drafting* 3 hrs. credit  
 PREREQUISITE: Drawing 105. Continuation of Drawing 105. Sections, Auxiliary projection, pictorial drawing, descriptive geometry, layout and development. Field trips. 0-6

- 125 *Lettering* 2 hrs. credit  
 PREREQUISITE: None. History, styles, and methods of lettering. Basic forms, media and tools, techniques, and designs. 0-4
- 155 *Orthographic Projection* 3 hrs. credit  
 PREREQUISITE: None. Use of instruments, lettering, principles of orthographic projection, auxiliary views, sections, dimensioning, pictorial drawing, white printing. 0-6
- 156 *Descriptive Geometry* 3 hrs. credit  
 PREREQUISITE: Drawing 155, Solid Geometry. Emphasis on space visualization and processes of solution. Problems comprise combinations of points, lines, planes, intersections, developments, warped surfaces, true angles, true size and shape, vectors, shades and shadows, and conics. 0-6
- 205 *Advanced Industrial Drafting* 3 hrs. credit  
 PREREQUISITE: Drawing 106, or 156. This is essentially a course, using the drafting board, for solving many general industrial problems. The Machinery's Handbook is used as a text. Problems are developed concerning the proper use of tolerances; proper dimensioning practice; the simple design of gears, couplings, simple clutches to meet specific demands. 0-6
- 206 *Advanced Industrial Drafting* 3 hrs. credit  
 PREREQUISITE: Drawing 205. Problems in design are expanded to include cams, gearing, jogs and fixtures, power transmission and some tooling. Field trips are taken through both trimesters. 0-6

## SURVEYING

- 205 *Elements of Surveying* 3 hrs. credit  
 PREREQUISITE: Mathematics 101 or equivalent. Elements of surveying; use of equipment, measurement of distances, angles, and evaluation; analysis and use of verniers; a study of the public land system; traverses and topographic surveys and mapping. 1-4

## ECONOMICS

- 111 *Essentials of Economics* 3 hrs. credit  
 PREREQUISITE: None. A study of the American Economic system with special attention to the problems of individuals as consumers and producers. 3-0
- 112 *Essentials of Economics II* 3 hrs. credit  
 PREREQUISITE: Economics 111. A continuation of Economics 111. Gives a further analysis of the workings of the American Economic system. 3-0
- 203 *Industrial Relations* 3 hrs. credit  
 PREREQUISITE: Economics 111 or 211. A study of the human factor in industry. Problems of wages, hours, unemployment, working conditions; Federal and state laws which relate to labor, management relations; policies and practices of unions and management. 3-0
- 211 *Principles of Economics* 4 hrs. credit  
 Open only to sophomores. A basic course in beginning economics; relation of production and income; forms of business organization; money and banking system of the United States; value of money; employment; business cycles and economic instability. 4-0

- 212 *Principles of Economics II* 4 hrs. credit  
PREREQUISITE: Economics 211. A continuation of Economics 211. The forces which determine prices under competition and under varying degrees of monopoly; function of prices and costs in allocating production factors; distribution of income; public finance; alternative economic systems. 4-0

## ENGLISH

- 111 *Freshman English* 3 hrs. credit  
PREREQUISITE: None. The purpose of this course is to develop competence in reading and writing through the reading and discussion of literary works in various forms and the writing of papers based on the readings. 3-0
- 112 *Freshman English* 3 hrs. credit  
PREREQUISITE: English 111. A continuation of English 111. Special attention is given to the preparation of the research paper. 3-0
- 121 *Business Communication* 3 hrs. credit  
PREREQUISITE: None. This course gives instruction and practice in writing of business letters, particularly letters of application, inquiry and reply, claims, and adjustments. A review of usage from the point of view of business and a short market research report are included. All assignments must be typewritten. 3-0
- 122 *Business Communication II* 3 hrs. credit  
PREREQUISITE: English 121. A continuation of English 121. This course emphasizes sales, collection, and adjustment series and substantial sales and market reports. 3-0
- 211 *Advanced Composition* 3 hrs. credit  
PREREQUISITE: English 112. After instruction and practice in various forms, the student is encouraged to pursue his own interests in composition under individual guidance. 3-0
- 221 *Introduction to Literature* 3 hrs. credit  
PREREQUISITE: English 112 or permission of department. This course is designed to increase the students' ability to read literature with understanding and enjoyment, with attention mainly to selected novels and poetry of various types and periods. 3-0
- 231 *Introduction to Drama* 3 hrs. credit  
PREREQUISITE: English 112 or permission of department. This course is concerned with understanding and appreciation of drama. Half the trimester given to the close reading of five or six of Shakespeare's plays and half to selected plays of the nineteenth and twentieth centuries. 3-0
- 241 *American Literature* 3 hrs. credit  
PREREQUISITE: English 112. The purpose of this course is to acquaint the student with the literary heritage of the United States through a study of the major writers. It is recommended that this course be preceded by English 221 or 231. 3-0
- 250 *Children's Literature* 3 hrs. credit  
PREREQUISITE: English 112. This course surveys literature for children of all ages and develops criteria for selecting books for children. 3-0



## GEOGRAPHY

- 111 *Physical Geography* 4 hrs. credit  
PREREQUISITE: None. Study of the natural environment which is important to man and his activities; introduction to maps and physical features; earth-sun-moon relationships; earth materials; landforms; drainage; and major natural resources. 3-2
- 112 *Physical Geography* 4 hrs. credit  
Continuation of 111. An introduction to weather and climate, soils and vegetation — their character, causes, significance and distribution; population distributions and characteristics. 3-2
- 121 *World Regional Geography* 4 hrs. credit  
PREREQUISITE: None. Essential Geographic characteristics and significant problems of the major regions of the world; cultural and natural resources of the nations of the world. 4-0
- 211 *Economic Geography* 4 hrs. credit  
PREREQUISITE: 112 or 121, or permission of instructor. Fundamentals of economic activities of the major world geographic regions; a study of such activities as agriculture, forestry, fishing, mining, manufacturing, transportation, and trade. 4-0

## GEOLOGY

- 111 *Physical Geology* 4 hrs. credit  
PREREQUISITE: None. A study of the materials and agents responsible for the development of topographic and structural features of the earth. Includes weathering, streams, glaciation, underground water and wind activity. Introductory study of common rocks and minerals. One field trip required. 3-2
- 112 *Historical Geology* 4 hrs. credit  
PREREQUISITE: None. A study of volcanism, diastrophism, and mountain building and their relationship to earth history. Includes successive stages in development of North America as a typical continent and evolution of life. Interpretation of topographic maps and identification of invertebrate fossils. One field trip required. 3-2

## HISTORY

- 111 *A Survey of Early Western Civilization* 4 hrs. credit  
PREREQUISITE: None. Political, social, economic, and cultural history of Europe from prehistoric times to the seventeenth century. Particular attention given to causes of the rise and fall of civilizations and their contributions to the modern world. 4-0
- 112 *A Survey of Later Western Civilization* 4 hrs. credit  
PREREQUISITE: None. Political, social, economic, and cultural history of Europe from the Wars of Religion to the present time. Particular attention given to colonial, national and democratic movements and their influence on current events. 4-0

- 113 *History of Michigan* 2 hrs. credit  
 PREREQUISITE: None. History of Michigan from the time of first known human inhabitants through French and British domination, and finally American acquisition of Michigan leading to territorial status and statehood. Emphasis on Michigan history as a representative part of human culture. 2-0
- 211 *History of the United States to 1865* 3 hrs. credit  
 PREREQUISITE: None. History of the United States from its immediate European backgrounds to the end of the Civil War. Some emphasis on social history and American international relations. 3-0
- 212 *History of the United States from 1865 to the Present* 3 hrs. credit  
 PREREQUISITE: None. A continuation of History 211. United States History from the end of the Civil War to the present time. Some emphasis on social history and American international relations. 3-0
- 217 *Russia Since 1900 (Same as Political Science 217)* 3 hrs. credit  
 PREREQUISITE: None. Institutional, social, and economic developments within Russia. Includes early developments, but emphasizes events since 1917. 3-0

## MATHEMATICS

- 101 *Technical Mathematics I* 4 hrs. credit  
 PREREQUISITE: Mathematics 119 if mathematics placement score is unsatisfactory. Designed for the first trimester in Technical Architecture and Technical Engineering curricula. Applications of arithmetic and plane and solid geometry, logarithms. 4-0
- 102 *Technical Mathematics II* 4 hrs. credit  
 PREREQUISITE: Mathematics 101. Designed for the second trimester in Technical Architecture and Technical Engineering curricula. Slide rule and applied problems, graphs, measuring instruments, practical algebra, geometric constructions, essentials of trigonometry, strength of materials, work and power, woodwork, tapers. 4-0
- 105 *Business Computation* 3 hrs. credit  
 PREREQUISITE: Mathematics 91 if mathematics placement test score is unsatisfactory. Combinations, special cases and short methods used in combinations; rapid calculation; various methods of proof in checking results; complex fractions and mixed numbers; decimals, percentage; interest; discount; logarithms, elements of statistics. 3-0
- 108 *Business Statistics* 3 hrs. credit  
 PREREQUISITE: Mathematics 119 or its equivalent. Elementary statistical concepts, frequency distribution, measures of central tendency, measures of variability, normal curve of distribution, sampling-error theory, time series, analysis of seasonal variation, and correlation theory. 3-0
- 110 *Basic Mathematics* 3 hrs. credit  
 PREREQUISITE: Mathematics 91 if mathematics placement score is unsatisfactory. Designed for elementary education candidates. Opportunity to remedy defects in the use of fundamental operations. Includes mathematics review and methods for elementary teaching. Topics studied are combinations, rapid calculation, mixed numbers, decimals, percentage, interest, discount, graphs, and statistics. Does not count toward mathematics major at senior college. 3-0

- 116 *Slide Rule* 1 hr. credit  
 PREREQUISITE: Mathematics 121 or its equivalent. Must precede or be taken concurrently. For engineering students or those majoring in physics or chemistry. Consult instructor before purchasing slide rule. 1-0
- 119 *Algebra* 4 hrs. credit  
 PREREQUISITE: Algebra 92 or its equivalent; Plane Geometry 93 advisable. Fundamental concepts of algebra including graphs, exponents, radicals, variation, proportion and logarithms; fundamental concepts of trigonometry, involving solution of right and oblique triangles.
- 120 *Solid Euclidean Geometry* 2 hrs. credit  
 PREREQUISITE: Mathematics 93 and 119, or Mathematics 119 may be taken concurrently or their high school equivalents must be on the student's record. Description: formulas, basic constructions and propositions, original exercises, mensuration. 2-0
- 121 *Plane Trigonometry* 3 hrs. credit  
 PREREQUISITE: Mathematics 93 and 119 or their equivalents. (Mathematics 119 may be taken concurrently). Radian measure, coordinate systems, trigonometric ratios, identities, equations, inverse functions, graphs, logarithms, reduction and addition formulas, solutions of right and oblique triangles, including areas. 3-0
- 122 *College Algebra* 3 hrs. credit  
 PREREQUISITE: Mathematics 121 or its equivalent. Review of exponents, radicals, quadratic equations; variations; proportion; systems of equations; complex numbers, theory of equations; determinants; inequalities. 3-0
- 123 *Plane and Solid Analytic Geometry* 4 hrs. credit  
 PREREQUISITE: Mathematics 120 and 122 or their equivalents. Cartesian coordinates, loci, symmetry, lines, conic sections, algebraic curves, transcendental curves, polar coordinates, space coordinates, planes, straight lines, quadric surfaces, space curves. 4-0
- 163 *Integrated Analytic Geometry and Calculus* 4 hrs. credit  
 PREREQUISITE: Permission of Department. General equation of second degree and its reduction to standard forms of conics; rotation of axes; synthetic division and remainder theorem; trigonometric, logarithmic, and exponential functions, and their derivatives; L'Hospital's rule, simple harmonic motion, Newton's method; integration by standard forms and partial fractions; separable differential equations. 4-0
- 201 *Technical Mathematics* 4 hrs. credit  
 PREREQUISITE: Mathematics 102. Designed for the third trimester in Technical Architecture and Technical Engineering curricula. 4-0
- 213 *Integrated Analytic Geometry and Calculus* 4 hrs. credit  
 PREREQUISITE: Mathematics 163. Area of surfaces of revolution, arc length, and curvature; determinants, direction cosines, space curves; partial derivatives, total differentials, multiple integrals; cylindrical and spherical coordinates; moments and centroids; infinite series, tests for convergence; Taylor's formula, Euler's identity; surfaces, normal line, and tangent plane; hyperbolic functions. 4-0

- 221 *Calculus* 5 hrs. credit  
 PREREQUISITE: Mathematics 123. Functions and limits; continuity; derivative; differentiation of algebraic, transcendental, and hyperbolic functions; maxima and minima; related rates; curve tracing; rectilinear and curvilinear motion; indefinite and definite integrals; areas; volumes; length of arc; work; liquid pressure; centroids; moments of inertia. 5-0
- 222 *Calculus II* 4 hrs. credit  
 PREREQUISITE: Mathematics 221. Further methods of integration, improper integrals, indeterminate forms, Taylor's and Maclaurin's series, infinite series, partial derivatives, multiple integrals, introduction to differential equations. 4-0

## MUSIC

- 111 *Music Appreciation* 3 hrs. credit  
 PREREQUISITE: None. Acquaints the student with the fundamentals of listening and with the musical classics. 3-0
- 121 *Elements of Music* 3 hrs. credit  
 PREREQUISITE: None. Planned to meet the needs of those who plan to teach in the elementary schools. Rudiments of music, including notation, clefs, keys, syllables. Teaching of rote songs. 3-0
- 141 *Choir* 1 hr. credit  
 PREREQUISITE: None. Directed toward the study of representative choral music and public performances in college and community activities. May be taken for four trimesters. 3-0

## PHILOSOPHY

- 211 *Introduction to Philosophy* 3 hrs. credit  
 Open to sophomores. Designed to acquaint the student with some of the fundamental questions that have confronted mankind and the way in which these questions have been dealt with by the most profound thinkers of the past and present. 3-0
- 221 *Logic* 4 hrs. credit  
 Sophomore standing or second trimester freshmen C+ or better. Aims to develop effective thinking through the study of classical logic. Includes the methods of clear argumentation, definition, the assessment of evidence and a brief introduction to inductive logic and scientific method. 4-0

## PHYSICAL EDUCATION

- 101 *Physical Fitness* M; W. 1 hr. credit  
 The course stresses the development of physical conditioning through such activities as calisthenics, gymnastics, and sports. 0-2
- 102 *Beginning Swimming Skills* M; W. 1 hr. credit  
 A course for those who are unable to swim. 0-2
- 103 *Advanced Swimming Skills* M; W; C. 1 hr. credit  
 An advanced course in swimming strokes and elementary diving. 0-2



- 104 *Water Safety Skills* C. 1 hr. credit  
Course leads to the American Red Cross Certificates in Senior Life Saving and Water Safety Instructor. 0-2
- 105 *Team Sport Skills* M. 1 hr. credit  
This course offers the student opportunity to learn the rules and fundamentals of such sports as softball, touchfootball, basketball, volleyball, soccer, etc. 0-2
- 106 *Dual Game Skills* C. 1 hr. credit  
A course in net games such as badminton, table tennis, and tennis, etc. 0-2
- 107 *Individual Sports Skills* C. 1 hr. credit  
The course is designed to deal with such sports as Golf, Bowling, Archery, Gymnastics, Skiing, Canoeing, Bait and Fly Casting, etc. 0-2
- 108 *Archery Skills* C. 1 hr. credit  
A course offering skills of archery, both target and field shooting. Both outdoor and indoor ranges are provided. 0-2
- 117 *Modern Dance Skills* W. 1 hr. credit  
Designed to teach fundamental movements of the body for meaningful expression as an art. 0-2
- 121 *Special Skills* M; W; C. 1 hr. credit  
A course designed to offer either special or adaptive skills. 0-2
- 155 *Dancing Skills* C. 1 hr. credit  
This course affords an opportunity to develop the various skills involved in social, square and folk dancing. 0-2

## PHYSICAL SCIENCE

- 101 *Physical Science* 4 hrs. credit  
PREREQUISITE: None. For students interested in understanding the major concepts of geology, chemistry, astronomy, and physics. Is intended to give the student a better grasp of the scientific method, and to afford practice in critical thinking. Lab fee \$10.00. 3-2
- 102 *Physical Science* 4 hrs. credit  
PREREQUISITE: Physical Science 101. Continuation of Physical Science 101. 4-0

## PHYSICS

- 111 *General Physics* 4 hrs. credit  
PREREQUISITE: Physics 82 or High School Physics, and High School Algebra I and II. A course designed to familiarize the student with basic physical principles. Deals with mechanics, heat, and sound. Lab fee \$10.00. 4-3
- 112 *General Physics II* 4 hrs. credit  
PREREQUISITE: Physics 111. A continuation of Physics 111. Covers magnetism, electricity, light, and modern physics. Lab fee \$10.00. 4-3

- 211 *General Physics* 5 hrs. credit  
 PREREQUISITE: High school physics or its equivalent; Mathematics 221. By permission, the latter may be taken as a parallel course. Covers the same general topics as Physics 111 but adapted to meet the needs of students of science and engineering. Many quantitative relationships more fully developed and applied to solution of additional problems. Lab fee \$10.00. 5-3
- 212 *General Physics* 5 hrs. credit  
 PREREQUISITE: Physics 211. A continuation of Physics 211. Covers magnetism, electricity and light. Lab fee \$10.00. 5-3
- 215 *Engineering Mechanics, Statics* 3 hrs. credit  
 PREREQUISITE: Physics 211 and Mathematics 213. Mathematics 213 may be taken as a parallel course. Covers forces, components, vectors, moments, couples, methods of sections, stress in frame structures analytically and graphically, cables, friction, centroids, shear and bending moments. 3-0

## POLITICAL SCIENCE

- 103 *Introduction to American Government* 3 hrs. credit  
 PREREQUISITE: None. (Not open to students with credit in Political Science 111). Organization and functions of the political, electoral, legislative, administrative, and judicial processes of the federal, and state, and local governments. 3-0
- 111 *American National Government* 4 hrs. credit  
 PREREQUISITE: None. (Not open to students with credit in Political Science 103). Organization and functioning of the political, electoral, legislative, administrative, and judicial processes of the federal government. 4-0
- 112 *State and Local Government* 3 hrs. credit  
 PREREQUISITE: A course in Political Science or permission of the instructor. Development, structure, organization and problems of the state and local units of governments along with their relation to the federal government. 3-0
- 211 *Comparative Government* 3 hrs. credit  
 PREREQUISITE: A college course in political science or history. Deals principally with governments of Great Britain, France, Soviet Russia, and Spain, with some reference to governments of Sweden and South American countries. Emphasis on theories of democracy, fascism, communism, and socialism. 4-0
- 213 *International Relations* 3 hrs. credit  
 PREREQUISITE: A college course in political science or history. Introduction to the study of politics among nations, designed to provide a working knowledge of concepts necessary to understanding current world affairs such as the state system, colonialism, imperialism, and regional arrangements. Includes a survey of international organizations including the United Nations. 3-0
- 215 *American Political Parties* 2 hrs. credit  
 PREREQUISITE: A college course in political science or United States history. History, organization, structure, and functions of political parties of the United States; use of public opinion by political parties; election results, pressure groups, and pressure politics; governmental regulation of political parties and conduct of elections. 2-0

- 217 *Russia Since 1900 (Same as History 217)* 3 hrs. credit  
PREREQUISITE: None. Institutional social and economic developments within Russia. Course includes early developments but emphasizes events since 1917. 3-0

## PSYCHOLOGY

- 211 *General Psychology* 4 hrs. credit  
PREREQUISITE: Must be a sophomore or be a freshman with one trimester of C+ or better average. Principles underlying experience and behavior, designed to give an understanding of human behavior as affected by learning, motivation, emotion, intelligence, perception, personality, and interpersonal relationships. 4-0
- 216 *Advanced General Psychology* 3 hrs. credit  
PREREQUISITE: Psychology 211. Designed for students who will major in psychology and those who wish to explore more fully the fundamental principles of psychological science. 3-0
- 222 *Child Psychology* 3 hrs. credit  
PREREQUISITE: Psychology 211. Facts and generalizations concerning growth of children from conception to adolescence; deals with physical, mental, social and emotional development. 3-0
- 231 *Psychology of Adjustment* 3 hrs. credit  
PREREQUISITE: Psychology 211. Application of psychological principles to interpersonal behavior; study of factors in the development of constructive personal adjustment as influenced by human relations in home, school, and community. 3-0

## SOCIOLOGY

- 211 *Principles of Sociology* 3 hrs. credit  
Introduction to scientific study of human relationship and institutions. Includes evaluation of current literature as a reflection of man's culture. Basic for all courses in social work. 3-0
- 212 *Social Problems* 3 hrs. credit  
PREREQUISITE: Sociology 211 or Psychology 211. The causes and solutions of social problems in a dynamic society. 3-0

## SPEECH

- 101 *Fundamentals of Speech for Engineering Students* 3 hrs. credit  
PREREQUISITE: None. For students in engineering and scientific fields. Practice in speaking and outlining stressed. Technical, expository speeches, illustrated with blueprints, charts, graphs, and scientific apparatus. Extemporaneous, manuscript, and report speeches. 3-0
- 102 *Business and Professional Speech* 2 hrs. credit  
PREREQUISITE: None. This course covers basic speech techniques which an individual may apply in his daily encounters with other people. Emphasis on speaking situations most frequently met by business and professional people, including business interviews, conferences, discussions, and planning and conducting meetings. 2-0

111 *Speech and Voice Improvement* 3 hrs. credit

PREREQUISITE: None. A course designed to create awareness of what constitutes an effective voice; one which shows how voice is produced and controlled in order that common faults are overcome or avoided; and one which suggests how voice can be improved as an instrument of communication. 3-0

112 *Principles of Public Speaking* 3 hrs. credit

PREREQUISITE: None. A course in practical problems of public address for the beginning student. Speaking assignments include impromptu, extemporaneous, manuscript, and memorized methods of delivery. Outlining and organization of content stressed. 3-0

113 *Radio and Television Workshop* 1 hr. credit

PREREQUISITE: None. Practical experience in mass media. Workshop members are given the opportunity to participate in writing, film, radio, and television projects. 0-3

201 *Speech for the Classroom Teacher* 3 hrs. credit

PREREQUISITE: None. A course for education majors. It aims for an understanding of speech in the educational process, self-improvement of the teacher through classroom speech activities, and application of these principles to teacher-pupil relationships. Its comprehensive goal is to aid the teacher in his professional and personal relationships with his students, his colleagues, and his community. 3-0

211 *Advanced Public Speaking (Speechmaking)* 3 hrs. credit

PREREQUISITE: Speech 111 or 112. A survey of several forms of public address. Includes the theory of speech; frequent platform experiences. Attention given to radio and television speaking procedure. All speaking assignments outlined and personal and social communication stressed. 3-0

213 *The Oral Interpretation of Literature* 3 hrs. credit

PREREQUISITE: Speech 111 or 112. Phonetics and voice culture is studied to enable one to interpret literature and to project personality over stage, radio, and television. Introduction to elements of voice, especially the voice mechanism. A survey of semantics examines language. 3-0

214 *Discussion in Human Affairs* 2 hrs. credit

PREREQUISITE: A previous speech course. Designed to explain discussion as a means to better understanding and action in human affairs and to develop attitudes and skills which enable people to participate in discussion competently. A study of group leadership. 2-0



**THE FOLLOWING COURSES ARE DESIGNED FOR ADULTS AND ARE  
USUALLY OFFERED IN THE EVENING COLLEGE**

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**ART**

91 *Background of Present Day Art* 2 hrs. service credit

PREREQUISITE: None. A survey of the major influence, events, artists and movements of art and how they are related to the philosophy of the present day field of art. (To be handled as a lecture seminar with group participation but not as laboratory experiences.) 2-0

240 *Studio Problems* 2 hrs. credit

PREREQUISITE: None. Individual instruction in both beginning and advanced painting. Still life, figure painting and landscape painting. Individual and group projects. 2-0

241 *Studio Problems* 2 hrs. credit

PREREQUISITE: None. A continuation of Art 240. 2-0

**BUSINESS**

91 *Notehand* 3 hrs. service credit

PREREQUISITE: None. A brief writing method, based on the alphabet of Gregg Shorthand, presenting notemaking principles designed to help the student read and listen more intelligently and to make notes from reading, from lectures, and while composing. 3-1

162 *Organizing and Operating a Small Business* 2 hrs. credit

PREREQUISITE: None. An attempt is made to cover most of the factors involved in the organizing and operating of a small business. The student is made aware of the various techniques and management aids available to a small business operator. 2-0

185 *Investments, How to Invest* 2 hrs. credit

PREREQUISITE: None. A course which covers the fundamentals of most types of investments, the various uses for each type. The problems of setting up a personal investment program are discussed. 2-0

261 *Review for CPS Exam* 3 hrs. credit

PREREQUISITE: None. General review of business law, accounting, economics, secretarial skills, secretarial procedures, and personal adjustment and human relations. Planning for taking the CPS Examination is also included. 3-0

262 *Review for CPS Exam* 3 hrs. credit

PREREQUISITE: None. Continuation of Business 261. Emphasis will be placed on those parts of the examination for which the individual students in the class have need. 3-0

## DRAMA

- 101 *Fundamentals of Acting* 2 hrs. credit

PREREQUISITE: None. This course provides the opportunity to explore basic and experimental areas in the field of acting. It includes the following units: Oral interpretation, voice and diction, motivation, stage movement, pantomime, creating mood, group participation in one act plays and general criticism. Through this kind of encouragement, a student should enjoy more self-confidence in developing a stronger personality along with learning technical aspects of good acting. 2-0

- 111 *Appreciation of the Theater* 1 hr. credit

PREREQUISITE: None. This course is designed for both the serious student of drama and the person with an avocational interest in the theater and acting. It covers the current different types of plays and acting, the roles of the director, the productional elements of a play, together with auditioning techniques, and consideration of the functions of the audience. Current best plays are used as vehicles for discussion. 1-0

## ECONOMICS

- 204 *Case Studies in Labor Relations* 3 hrs. credit

PREREQUISITE: Economics 203. Application of principles of Industrial Relations to collective bargaining case studies. Experience is gained in techniques of grievance procedures and arbitration. 3-0

## ENGLISH

- 90 *Vocabulary and Spelling Review* 1 hr. service credit

PREREQUISITE: None. Designed to improve the student's spelling and vocabulary. The rules of spelling will be discussed as well as teaching the student new ways to increase his word power and to add new words to his vocabulary. 1-0

- 151 *Creative Writing* 2 hrs. credit

PREREQUISITE: A manuscript of 2500 words. This is primarily a writers workshop conducted along lines similar to the Antioch Writers Conferences. Primary objectives are to obtain a working understanding of the basic principles of effective written communication together with practice and constructive criticism in the application of these principles in the writing of original materials. 2-0

## GEOLOGY

- 172 *Geology of the National Parks* 2 hrs. credit

PREREQUISITE: None. Study of the National Parks and Monuments by geographic areas. Supplemented by color slides and movies. 2-0

## MATHEMATICS

- 109 *Probability and Statistics* 3 hrs. credit

PREREQUISITE: 2 years of high school Mathematics. Considers frequency distributions, mean and standard deviation, Chebychaff's theorem, sample spaces, probabilities and sets, empirical results, events, conditional probability, independence, binomial distribution, testing hypotheses and acceptance sampling. (NBC Continental Classroom on TV) 3-0

## PERSONNEL

- 151 *Personnel Principles and Manpower Management* 3 hrs. credit  
PREREQUISITE: None. Examine ways by which individual and group needs may be merged with the needs of business. Covers latest developments in industrial relations and manpower management; job analysis, organizational planning, staffing, interviewing, testing, induction, training in employment, labor relations, contract negotiations, compensation employee morale. 3-0
- 152 *Industrial Psychology* 3 hrs. credit  
PREREQUISITE: None. Applying psychological principles to selection, placement, training, supervision, evaluation and motivation of personnel. Introduction to problems of human relations in industry. 3-0

## PHILOSOPHY

- 151 *Creative Thinking* 2 hrs. credit  
PREREQUISITE: None. Presents the latest information on the creative thought process and the type of environmental factors most conducive to creativity. This is integrated with a series of projects which help each student to exercise and mature his own creative capacities. 2-0
- 152 *Ideas That Have Challenged Minds* 2 hrs. credit  
PREREQUISITE: None. The complexity of contemporary thought: its disagreements, instability, indifference, and vagueness discourage attempts to bring into focus and scrutiny the formation and projection of idea systems which have seemingly altered man's destiny. This course aims at selecting a few thinkers who represent the challenge of their time, and how these are reflected in idea systems today. 2-0

## RELIGION

- 101 *Basic Christian Beliefs* 2 hrs. credit  
PREREQUISITE: None. A study of the basic Biblical doctrines of forgiveness, repentance, salvation, etc., from several theological angles. Lecture and discussion. 2-0

## THE IMPROVEMENT DIVISION

- 51 *Methods of Effective Study and Reading* 4 hrs. service credit  
PREREQUISITE: None. The student is given an initial and final diagnosis of his reading skills and individual help with problems in academic achievement. Efficient study procedures, note taking and examination writing are developed. Techniques for the improvement of vocabulary, spelling, reading comprehension and reading rate flexibility are taught. Required of full time students in the improvement area.
- 52 *Reading* 2 hrs. service credit  
PREREQUISITE: Methods of Effective Study and Reading 51 or permission of the instructor. A course designed to build superior reading skills.
- 72 *Elements of English Composition* 4 hrs. service credit  
Designed for students who need to improve their writing before taking Freshman Composition. In order of emphasis the materials covered are vocabulary, spelling and style.

- 81 *Chemistry* 5 hrs. service credit  
PREREQUISITE: Algebra 92 or equivalent. Designed as preparatory to college chemistry for the student with no previous course work in chemistry.
- 82 *Physics* 5 hrs. service credit  
PREREQUISITE: Algebra 92 and Plane Geometry 93 or equivalents. Designed as preparatory to college physics for those with no previous course work in physics.
- Note:*  
The mathematics courses listed below are to be taught by "programmed study" methods. Students may proceed as fast as they are able and may undertake succeeding courses as soon as prerequisites are successfully met.
- 91 *Arithmetic* 4 hrs. service credit  
PREREQUISITE: None. Designed to meet the needs of students deficient in arithmetic as shown by a mathematics placement test. Four fundamental operations on whole numbers, common and decimal fractions, percentage, and applied problems. Preparatory to Algebra 92.
- 92 *Algebra* 4 hrs. service credit  
PREREQUISITE: Arithmetic 91 or its equivalent, and adequate test scores. Four fundamental operations on monomials, polynomials, and fractions; linear equations; quadratic equations; systems of equations, mental multiplication and factoring; exponents and radicals.
- 93 *Plane Geometry* 4 hrs. service credit  
PREREQUISITE: Algebra 92 or its equivalent. Angles, parallel lines, Pythagorean theorem, polygons, loci, circles, proportional line segments, similar polygons, areas.
- 94 *Algebra II* 4 hrs. service credit  
PREREQUISITE: Algebra 92 or equivalent; Plane Geometry 93 is recommended. Fundamental concepts of Algebra including graphs, exponents, radicals, variations, and logarithms; fundamental concepts of trigonometry, involving solution of right and oblique triangles. A student who has met all entrance requirements for the College of Community Service and who receives a B in this course is entitled to receive academic college credit.



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